

FOR
RICHER
FIELDS

Croplife

PUBLISHED
EVERY
MONDAY

WEEKLY NEWSPAPER FOR THE FARM CHEMICAL MANUFACTURER, FORMULATOR AND DEALER

Published by The Miller Publishing Co., Minneapolis, Minn.

2

Subscription Rates:
\$5 for 1 year, \$9 for 2 years

APRIL 11, 1955

Acceptance under Section 34.64,
P. L. and R. authorized.

No. 15

Indian Fertilizer Project Allotted \$5 Million by FOA

WASHINGTON — Foreign Operations Administration has allotted \$5,000,000 to buy fertilizer materials for a fertilizer demonstration project for India. The chemical fertilizer materials to be procured include ammonium sulphate and three types of fertilizer new to India. Those types are ammonium sulphate, urea and nitrochalk.

The ammonium sulphate is scheduled to be procured and imported during January - February, 1955, but the new types will be obtained in time for delivery by September, 1955.

Of the total dollar authorization for these fertilizer projects \$1,151,000 is earmarked for the fertilizer demonstration project leaving \$4,849,000 available for plant food materials as enumerated above.

In the demonstration project FOA has allotted \$1,117,000 for procurement of nitrogenous fertilizers and \$4,000 for procurement of potash.

FOA also announced that it has allotted \$1,650,000 to Turkey for fertilizer.

Also on a world wide procurement basis, the Turkish government has been granted procurement authorization of \$1,250,000 for nitrogenous fertilizers and \$400,000 for phosphatic fertilizers.

FOA also has authorized Turkey to procure from the U.S. one million dollars for agricultural pesticides for contracting between April 4, 1955, and May 31, 1955.

Fertilizer Sales Off in South, Up in California-Arizona, Even in Southern Central Area, NFA Spot Survey Shows

WASHINGTON — Fertilizer sales thus far this season are about 5% behind those of a year ago in the South, but ahead in the California-Arizona area and about even in the Arkansas-Oklahoma-Texas area, according to a spot survey of producers

conducted by the National Fertilizer Assn.

Much of the lost ground in the South is expected to be made up by the end of the season, with the consensus indicating that 1954-55 sales will be within two to three per cent

of those for a year earlier, NFA said. Because of the trend toward higher analysis mixtures, consumption of actual plant food is expected to equal or slightly exceed that of the 1953-54 season.

Results of the survey are reported in the April 1 issue of Fertilizer News, published by NFA under the editorship of Delbert L. Rucker. The following is from the NFA report:

Only in the California-Arizona area was an increase in sales indicated so far this year. Sales appear to be running even to as much as 10% ahead of 1953-54 in this area, with a net increase for the year predicted at around 7%.

In the Arkansas-Oklahoma-Texas area, over-all sales to date seem to be about even with last year, and most reporters predict a substantial increase—perhaps as much as 10%—for the year as a whole.

The southeastern states as a group showed the largest decrease in sales to date, but improvement is expected by the end of the season.

Florida seems to be the bright spot in this region. While reports varied widely for different sections of the state, shipments both to date and for the year as a whole were estimated to be about even with last year.

The Kentucky-Tennessee area is only about 3 to 5% behind last year at this time, but reports indicate that the gap may widen as the season progresses.

Of all the states covered by this survey, Louisiana seems to be running the furthest behind at this point, apparently due to adverse weather conditions, but most observers believe that consumption will at least break

(Continued on page 21)

Political Considerations Cloud U.S. Agriculture Program Plans

By JOHN CIPPERLY
Croplife Washington Correspondent

WASHINGTON — The pattern of planted acreage for new crops is at best obscure and in the mental process stage—a process which probably will be modified by political considerations but still leaning toward the U.S. Department of Agriculture program goals.

Last week Ezra Taft Benson, secretary of agriculture, gave attention to the wheat surplus situation by stating that its solution was in the distant future. He said he would look with favor now on legislation whereby he could obtain clear congressional authority to fix wheat price supports at other than 50% of parity to co-operators if the wheat farmers voted down marketing quotas for the 1956 crop in the forthcoming referendum.

James F. McConnell, assistant secretary of agriculture, is quoted as saying that USDA is considering a request for clear-cut authority to fix a price support level between the 50% level of parity and the existing levels if marketing quotas are rejected by the producers.

Just why USDA wants this clear congressional authority to set another level of support is uncertain. There is a broad provision of the Farm Law which gives to the secretary of agriculture power to fix the support level at any per cent of parity for any of the basic com-

modities if he finds at his discretion it is in the national interest.

Obviously a drop of the price support level for wheat to 50% of the parity price would have sweeping effects on world wheat prices and might touch off an adjustment which could influence all aspects of the industrial economy. Just why Mr. Benson wants full congressional authority to adjust wheat price supports if the 50% of parity level faced him later is not clear except for the political aspects.

It is no secret USDA officials would settle for a situation where they could set the price support for the 1956 wheat crop at 65-70% of parity with acreage allotments and no marketing quotas. To sustain this possible domestic price level influence and to prevent a disastrous slide in world

(Continued on page 21)

Du Pont Starts Operations at New Sulfuric Acid Unit

EAST CHICAGO, IND. — The world's largest single unit for production of sulfuric acid has been brought into commercial operation at the East Chicago Works of the Du Pont Company's Grasselli Chemicals Dept., the company has announced. The unit is capable of producing more than a trainload of acid a week.

Since World War II Du Pont's long-range expansion and modernization program of sulfuric acid manufacturing facilities has included a new plant at Richmond, Va., in 1947; a new contact unit at Cleveland, Ohio, in 1949; a contact unit, one of the largest in operation, erected at Grasselli's Linden, N.J., Works in 1953 and the latest sulfuric unit at East Chicago.

The Grasselli Chemicals Dept. of Du Pont also manufactures sulfuric acid at Ecorse, Mich.; Lockland, Ohio; Toledo, Ohio, and Wurland, Ky.

Acid from the new unit will supply customers in the Illinois-Indiana-Wisconsin area, and will be used primarily in the manufacture of insecticides, petroleum products, chemicals, medicines and other products.

The new unit, under construction since last August, was built by the Du Pont Engineering Department.

Shea Chemical To Double Phosphate Capacity

BALTIMORE, MD. — A \$5 million expansion program designed to double its capacity for producing elemental phosphorus and sodium phosphates has been announced by Shea Chemical Corp. The construction project, due to be completed by the end of 1956, comprises four steps: Construction of a second 20,000 ton phosphorus furnace in Columbia, Tenn.; a new phosphate rock washing and preparation plant in the same locality; a new sodium phosphate and phosphoric acid plant in Dallas, Texas; and the enlargement of a present plant at Adams, Mass. Announcement of the plan was made by Vincent H. Shea, president.

Design and construction will be
(Continued on page 17)

Technical Aspects of Pesticides Reviewed at ACS Meeting

CINCINNATI — The technical aspects of many pesticides were reviewed here March 29 to April 7 as the American Chemical Society held a national meeting at the Netherland Plaza Hotel. Thursday morning's session of the Pesticides subdivision of the Division of Agricultural and Food Chemistry was presided over by Joseph A. Noone, technical adviser, National Agricultural Chemicals Assn., Washington, D.C.

Methods of determination of pesticidal chemicals in crops, soils and foodstuffs were discussed in a number of papers. The determination

of 2,4-D acid in herbicides by infrared spectrophotometry was covered in a paper by K. S. Dress and R. H. Shupe, Columbia-Southern Chemical Corp., Barberton, Ohio; and the "Chemical Determination of Dieldrin in Crop Materials" was the title of a paper presented by three men from Shell Development Co., Emeryville, Cal. They were A. E. O'Donnell, H. W. Johnson, Jr. and F. T. Weiss.

"Agricultural Applications and Soil Residue Studies of 3-Amino-1,2,4-Triazole" was the title of a paper by
(Continued on page 21)

Inside You'll Find

sect Notes	4
er the Counter	9
hat's New	12
g of the Week	10
orld Report	18
itorials	22
dex of Advertisers	23
reeting Memos	24



Dr. Edwin C. Kapusta

Edwin C. Kapusta To Join Staff of U.S. Potash Co.

NEW YORK—United States Potash Co. has announced the appointment of Dr. Edwin C. Kapusta as technical service director. Dr. Kapusta will join the staff of the firm July 1.

Dr. Kapusta has been with the National Fertilizer Assn., serving as its chemical engineer, since July, 1951. He is a graduate of Rensselaer Polytechnic Institute, was awarded his master's degree from Worcester Polytechnic Institute and his Ph.D. in chemical engineering from Iowa State College where he was engaged in fertilizer research for the engineering experiment station of the college. He served in the naval reserve during 1943-46 and was previously with the American Cyanamid Co. at its Stanford Research Laboratory.

Dr. Kapusta is presently in charge of work in the field of technical service and research on fertilizer manufacturing technology involving liaison between NFA and state, federal and private agencies engaged in such studies.

He served as co-secretary of NFA's Plant Food Research Committee, and has been active on the fertilizer technology subcommittee of the National Joint Committee on Fertilizer Application as well as several other industry groups dealing with chemical control and fertilizer technology.

He is well-known in fertilizer industry circles for his efforts in promoting improved fertilizer technology and has authored many articles on fertilizer production and research. He is a member of the American Chemical Society and Phi Lambda Upsilon, Tau Beta Pi and Sigma Xi societies. Dr. Kapusta is married and the father of three children.

Florida Consumption

TALLAHASSEE — Fertilizer consumption in Florida during February totaled 269,115 tons, according to a report by the state department of agriculture. This included 130,950 tons of mixed goods and 39,165 tons of materials. The mixed goods total included 16,628 tons of 4-7-5, 8,476 tons of 4-8-8 and 7,852 tons of 4-10-10.

SOYBEANS IN INDIANA

LAFAYETTE, IND.—Almost two million acres of soybeans are grown annually in Indiana. Soybeans rank as the second most valuable of the cultivated crops, and exceed the acreage planted to wheat and oats.

Three Panels on California Fertilizer Meeting Program

DAVIS, CAL.—Three panel discussions—on field and forage crops, vegetable crops and deciduous and citrus fruit crops—will highlight the third California Fertilizer Conference, to be held at the University of California here April 26. Attendance of more than 300 is expected.

The conference is being sponsored by the Soil Improvement Committee of the California Fertilizer Assn. The panels are scheduled during the afternoon program.

The morning program will include the following speakers and topics:

Comments by B. H. Jones, Sunland Industries, Inc., Fresno, president of the California Fertilizer Assn.; "Developing Potash Use in California," M. E. McCollam, American Potash Institute, San Jose; "Agriculture's Challenge," Dr. Stanley Freeborn, provost, University of California at Davis; "Beneficial Farm Rehabilitation Project," Leverne N. Freimann, Whatcomb County extension agent, Bellingham, Wash.; "Progress Report of Fertilizer Demonstrations on Range Land," A. George Park, Balfour, Guthrie & Co., Ltd., San Francisco; "Pesticide - Fertilizer Mixtures," Allen B. Lemmon, chief, California Bureau of Chemistry.

Also in the morning the motion picture, "California Grows With Fertilizer" will be shown. The film was produced by the California Fertilizer Assn. and the National Fertilizer Assn.

Members of the panels will be:

Field and Forage Crops—John Tollefson, Triangle Co., Salinas, moderator; Dr. W. E. Martin, Dr. W. A. Williams and Dr. D. S. Mikkelsen, all of the University of California; G. D. Manuel, Spreckels Sugar Co., San Francisco; Dr. Guy F. MacLeod, Sunland Industries, Inc., Fresno, and A. George Park, Balfour, Guthrie & Co., Ltd., San Francisco.

Vegetable Crops—Weir Fetters, the Best Fertilizer Co., Stockton, moderator; Dr. J. E. Knott and Dr. O. A. Lorenz, both of the University of California; Forrest Fuller, American Potash Institute, Newport Beach; John Pryor, John Pryor Co., Salinas, and Howard Hawkins, Golden State Plant Food Co., Glendora.

Deciduous and Citrus Fruit Crops—Robert E. Whiting, Swift & Co., Hayward, moderator; Dr. L. E. Proebsting, Dr. D. G. Aldrich, Jr., Dr. Omund Lilleland and Dr. E. F. Serr, all of the University of California.

J. H. (Hank) Nelson, Stockton, is program chairman.

Dr. H. G. Gramlich, former director of agricultural development of the Chicago and North Western Railway System, Chicago, will be the principal speaker at the banquet, scheduled for the evening of April 26. His topic will be "What's Around the Corner."

Members of the University of California Fertilizer Committee and of the CFA Soil Improvement Committee will hold a breakfast meeting April 27 on the Davis Campus. Dr. Louis B. Proebsting of the University at Davis, chairman of the University Fertilizer Committee, has assisted in making conference arrangements at Davis.

Mechanization Pageant

EAST LANSING, MICH.—A pageant of progress in farm and home mechanization during the past 100 years will be held at Michigan State College here Aug. 15-20. According to the college, it will be the most complete assembly of farm and home equipment ever made in the U.S.



William B. McCloskey

W. B. McCloskey Elected Vice President of Grace

NEW YORK—William B. McCloskey has been elected a vice president of W. R. Grace & Co. where he will be in charge of the Administrative Controls Division. Mr. McCloskey has been serving as vice president in charge of chemical operations of the Davison Chemical Co. division of W. R. Grace & Co. In his new capacity he will make his headquarters in New York City.

Joining Davison in 1930 Mr. McCloskey held various executive positions before being named a vice president in 1953. He was president of the National Association of Cost Accountants in 1950-51. The Davison Chemical Corp. was merged into W. R. Grace & Co. in May, 1954.

Glenmore H. Wesenberg Named Eastern Project Engineer for FEECO

GREEN BAY, WIS.—James E. Madigan, president of Fertilizer Engineering and Equipment Co. of Green Bay, Wis., has announced the appointment of Glenmore H. Wesenberg, to the position of eastern project engineer. Mr. Wesenberg fills a newly created post.

Other promotions in the home office include Edward Slezewski of the drafting department as head draftsman, and Jerrine V. Steiner, who joined the staff in 1954, as office manager.

Proposed Law Against Poisons Modified In New Mexico

SANTA FE, N.M.—Diligent work by the New Mexico Grain and Feed Dealers Assn. resulted in modification of some proposed state laws against poisons so that control of insect pests by fruit growers and ranchers would not be impaired.

The first bill, introduced on behalf of societies for the prevention of cruelty to animals, would have prevented sale of arsenic and strychnine, salts of same and preparations containing them, except on a doctor's prescription. Its objective was to stop use of these poisons by dog poisoners, but its impact would have penalized farmers who use insecticides and other agricultural chemicals. The bill was killed in committee.

The second bill, with the same objective, was passed by both houses of the current legislature, and approved by the governor. But it specified exemptions for poisons used in agriculture and mining. Regulations will remain the same as in previous years.

\$7 Million of American Potash Debentures Offered

LOS ANGELES — Seven million dollars of American Potash & Chemical Corp. 3% convertible subordinated debentures have been offered to the public by an underwriting group comprised of Lehman Brothers; Glore, Forgan & Co., William R. Staats & Co. and J. Barth & Co.

The debentures, due March 1, 1970, were priced at 101% plus accrued interest, to yield 3.54%.

It is contemplated that American Potash & Chemical Corporation will apply \$900,000 of the net proceeds to reducing bank loans, while the balance of the proceeds will be added to general funds of the company, to be used for general corporate purposes.

Such purposes include payment for planned improvements to present plants and working equipment estimated at \$3,000,000, replenishment of working capital used in recent years for plant improvements and expansion, and replenishment of working capital for investments made in Bikita Minerals (Private) Ltd. and American Lithium Chemicals, Inc.

The debentures are convertible in Class B stock at \$90 a share and will have a sinking fund designed to retire \$350,000 principal amount annually in the years 1961 to 1969, inclusive.

Twenty seven per cent of American Potash & Chemical Corp. 1954 sales went to domestic agriculture, 14% to the glass industry, 14% for export, 10% to the kraft paper industry, 8% for porcelain enamels and glaze and the remaining 27% for miscellaneous uses.



Harold L. Straube

Harold L. Straube Joins Sales Division Of Stauffer Chemical

NEW YORK — Harold L. Straube has been appointed to the Agricultural Sales Division of Stauffer Chemical Co., New York.

An entomology graduate from the University of Massachusetts, Mr. Straube was associated with John Powell & Co. from 1940 until 1954, holding various posts in agricultural chemical research, sales, production and purchasing.

Prior to joining Stauffer, he was operations manager in charge of production and purchasing. Mr. Straube will have his headquarters in Stauffer's New York office.

STORED GRAIN INSECTS

Stored grain insects in homes, mill elevators, and farm bins destroy million tons of wheat every year.

Turf Conference Hears About New Pesticide Horizons

EAST LANSING, MICH.—An assurance that insecticides and pesticides will be improved greatly during the next 25 years was voiced by Ray Hutson, head of the Entomology Department of Michigan State College, in his address to the recent 25th Michigan Golf Course Superintendents Turf Conference.

Mr. Hutson expressed his confidence that insecticides will be made more effective, that the application processes will be made simpler, and that their cost will be reduced.

Accomplishments of the past 25 years were reviewed and predictions made on some of the progress anticipated in the next quarter century. The list of topics included feeding practices, use of fertilizer, breeding of grasses, control of weeds, and insect pests on golf courses.

Mr. Hutson stressed the importance of using the right insecticide, pointing out that an incorrect insecticide and the wrong method of application could harm the turf, could kill the long insects, and prove costly.

Dutch elm disease, caused by three kinds of beetles, was viewed by Mr. Hutson as one of the chief insect pests to golf courses. "Good housekeeping practices and the use of DDT will control and check any outbreaks of this pest on the golf courses, or at parks or private yards," he contended.

Studies have proven, he declared, that the Dutch elm disease is spread by the elm bark beetle, the European elm bark beetle, and the lesser elm bark beetle. These beetles fly out of dead wood in May and feed on small twigs. Mr. Hutson said the best time to spray is when the leaves are breaking, and then again when the next generation of insects appears in the summer. He stressed the importance of spraying the tops of trees, but added that airplanes for spraying are not satisfactory.

In addition to spraying to control Dutch elm disease, Mr. Hutson stressed the need to dispose of elm trees that are in poor condition. Other than permit the dead wood to rot on the course or be saved for firewood, Mr. Hutson urged the men to destroy it without delay.

To illustrate the effectiveness of spraying, Mr. Hutson said that Amherst, Mass., located in the midst of an area with Dutch elm disease, has stayed for the past 25 years and has counted a single case of Dutch elm disease.

Golf courses in Ohio and Maryland are having increasing trouble, he said, with the Japanese beetle, which has not become troublesome yet in Michigan. He urged the men to report any cases of Japanese beetle to the State Department of Agriculture as he expressed a fear the insect might become established in Michigan in the next 25 years. The cost of controlling the Japanese beetle has been reduced now to help ease the problem, he pointed out.

Among the other speakers at the two-day conference were B. H. Griggs of the M.S.C. Botany and Plant Pathology Department, who spoke on "Quarter Century of Progress in Controlling Weeds in Fine Turfgrass"; the Outlook for the Next Quarter Century; and William Klomperans, plant pathologist, Upjohn Company, Kalamazoo, Mich., on "A Quarter Century of Progress of the Identification and Control of Turfgrass Diseases and the Outlook for the Next Quarter Century."

Arthur F. Miller, Swift Plant Food Division Head, Retires

CHICAGO — Arthur F. Miller, Western Springs, Ill., general manager of the Plant Food Division for Swift & Co. since 1947, retired April 1.

He was succeeded by William F. Price, Hinsdale, Ill., who has been assistant manager of the Plant Food Division since 1952.

Mr. Miller, who was born at New Virginia, Iowa, began his career of 43 years at Swift as secretary to the manager of the Plant Food Division. An expert gardener, he visualized a potential market for a lawn and home garden plant food in the growing community of homes in and around Chicago.

He believed an easy to handle product prepared in a small package was needed to help develop fine lawns

and decorative gardens by the new population of homeowners. He was given approval to try to develop such a product in 1923.

A year later, under Mr. Miller, Swift began marketing Vigoro. Mr. Miller coined the name from "vigorous growth." The product contained nitrogen, phosphorus, potassium and trace elements essential to plant growth.

The first year's operation resulted in the sale of a modest 200 tons, but the product is now the largest home and garden seller in the industry and is sold in all 48 states, as well as Canada.

Besides heading an organization which numbers 26 plant food factories in the U.S. and Canada, Mr. Miller has been an exponent of complete plant foods. He is a recognized authority on plant nutrition and plant food development, whose entire career was devoted to selling farmers, landscapers, home gardeners and

other growers on the good sense of soil nutrition and plant feeding.

Mr. Price joined Swift in 1925 at Calumet City, Ill., as a sales representative for the Plant Food Division. He became sales manager of the Pacific Coast area with headquarters at Los Angeles in 1929. He later managed plant food factories at Ontario, Cal. and Los Angeles.

He became manager of Vigoro sales in 1943 at Chicago, and he became general sales manager of the Plant Food Division in 1949.

RESEARCH PROGRAM

RALEIGH, N.C.—Industry and the armed forces are in close cooperation with the North Carolina State College in a research program involving more than 365 projects in which \$3.5 million is invested each year. The bulk of the research funds goes into agricultural projects. Industries supply most of these funds.

Kraft Bag's NEW Packer delivers greater accuracy and higher production at lower cost!



Kraft Bag Corporation

the most completely integrated manufacturer of multiwall bags in the industry, is now marketing The **Kraftpacker**, an automatic open mouth bag filling machine that increases production and reduces packaging costs at an almost unbelievable rate.

The **Kraftpacker** maintains accuracy to within a few ounces, plus or minus, even at speeds up to 24-100 lb. bags a minute—with one operator!

Costing little money to buy, requiring little maintenance for steady operation, the **Kraftpacker** is a proved money-saver in every way... affording still greater economies for those who convert from valve bags.

There's a machine in operation near you. We shall be glad to arrange for you to see it.

You can depend on **KRAFT** both as a source of supply and as a source of complete satisfaction.



Sold exclusively by

KRAFT BAG CORPORATION

Gilman Paper Company Subsidiary

Send for Brochure

630 Fifth Ave., New York 20, N. Y. Western Sales Office: Daily News Bldg., Chicago 6, Ill.

INSECT, PLANT DISEASE NOTES

Aphids Surveyed in 15 Kansas Counties

MANHATTAN, KANSAS—Fifteen counties of central and south central Kansas were surveyed to determine the presence of aphid infestations and other insects that might affect wheat, barley, and oats. Minor infestations of no economic significance were found in a few wheat fields of Marion and Chautauqua Counties. No greenbugs were found; the species collected all appeared to be English grain aphids.

Army cutworms were found in nearly all fields examined in south central Kansas counties. Populations ranging from 1 to 8 larvae per square foot were common in most alfalfa fields in this area.

Counts in wheat, barley, and oats fields ranged from 1 to 5 larvae per yard of drill row.

Many fall-seeded alfalfa fields in Cowley, Sumner, Sedgwick, Harvey, Butler, and Reno counties require immediate control applications to prevent any further loss of stand. Many old stands of alfalfa in these counties will require frequent examination by the farmer to determine the need for application of insecticides to protect against loss of a part of the first hay crop. — David L. Matthew.

Greenbugs, Hoppers Featured in Texas

MORTON, TEXAS—Greenbug infestations in wheat fields have become serious in at least 27 West

Texas counties, according to Homer Thompson, Cochran County Agricultural Agent.

He said that an extensive survey in these counties revealed from 100 to 300 bugs per linear foot of row in one or two counties, but in some areas were as high as 2,000 per foot. Thompson has instructed wheat producers to apply parathion when the ground temperature is higher than 50 degrees.

Ladybeetles were increasing and would be of some help in ridding their natural enemies, the greenbugs, from wheat fields, he said. However, the infestations are so serious in some counties that not enough ladybeetles are present to control the situation.

Entomologists are predicting that

several areas in West and North Central Texas can expect grasshopper outbreaks this year. At least 10 counties in the Texas Panhandle are on the danger list. Farmers in the western part of the state have been requested to be on the alert for early hatchings, and if enough young grasshoppers are found, control measures should be started promptly.

Dry Weather Helps Florida Insects

GAINESVILLE, FLA. — Lesser cornstalk borer in the 2d or 3d instar larva was collected from corn in small experimental plot on the campus at the University of Florida. This is the first report from this area this season. The dry weather was favorable for this pest.

Vegetable weevil averaging 5 larvae, pupae, and adults per plant was infesting turnips at Alford, Jackson County. Vegetable weevil was also infesting tomato plants at Marianna. Control was recommended.

Green peach aphid was infesting Irish potatoes in Alachua County. This aphid is rather widely scattered over the potato growing area of Alachua and Saint Johns Counties.—H. A. Denmark.

Maryland Reports Pea Aphids, Weevils

COLLEGE PARK, MD. — Alfalfa weevil is increasing its activity with mating and egg laying in Talbot and Queen Anne's Counties. Pea aphids appear to be getting an early start with 4 to 25 per sweep.

Spittlebugs are a little late in hatching, a few were found in Queen Anne's County and at College Park. They may be located at the base of weeds in protected spots. Small numbers of lesser clover leaf weevils were swept from alfalfa in Talbot County.—Thomas L. Bissell.

Iowa Insects Begin Activity

AMES, IOWA — Spring cankerworm moths are flying. Only the males have wings. The females are wingless. They lay their eggs on elm, apple, and, in heavy infestations, on other shade trees. The eggs hatch about at the time leaves appear. Watch for the young worms or leaf feeding. Spray with 2 pounds 50% DDT wettable powder per 100 gallons of water.

Clover mites are emerging from hibernation. Large numbers are reported on inside and outside walls of houses and on window sills. Aerosol bombs containing activated pyrethrins can be used inside the home.—Harold Gunderson.

Armyworm History For 1954 Reviewed

WASHINGTON — Outbreaks of armyworm (*Pseudaletia unipuncta*) in many areas of the U.S. during the summer of 1954, caused many millions of dollars worth of damage.

The U.S. Department of Agriculture has just published a report on the armyworm infestation of 1954, compiled from special information supplied principally through clearing offices in each of the 48 states. The survey was conducted by the Agricultural Research Service, Plant Protection Control Branch, Economic Insect Survey Section.

These outbreaks caused heavy losses in many states, but mostly in the area east of the Mississippi River.

In States having the armyworm problem in both 1953 and 1954 there was considerable variance in infestations. The outbreaks of 1954 were more widespread or serious in Mississippi and Arkansas than the previous year as was the case in Maine where moth migration may have been responsible.

In Missouri the uniformly wide

if it can be bagged...

BAGPAK will bag it better!

Here are just some of the advantages Bagpak Multiwall Bags give you and your customers.

- Lower packaging costs • Reduced freight costs • Better stacking of filled bags • Both filled and empty bags require less storage space • Shipping and storage on Bagpak Disposable Pallets cut unloading costs • Maximum protection against sifting, contamination, infestation, dampness • Full measure always emptied • Minimum dust hazard • Advertising message can be printed on face of bags

Bagpak production and quality are backed by the tremendous countrywide facilities and resources of the International Paper Company. For complete information and suggestions as to how you can package and ship your product more profitably, write: CL20

International Paper Company, Bagpak Division
220 E. 42 Street, New York 17

International Paper Company
BAGPAK DIVISION

BRANCH OFFICES: Atlanta • Baltimore • Boston • Chicago • Cincinnati • Cleveland • Denver • Des Moines • Detroit • Indianapolis • Kansas City, Kansas • Los Angeles • Minneapolis • New Orleans • Philadelphia • Pittsburgh • St. Louis • San Francisco • IN CANADA: The Continental Paper Products, Ltd., Montreal, Ottawa, Toronto

spread infestation could have been due to a considerably greater acreage of barley. Wisconsin, Rhode Island and New York also had heavier numbers. Populations were about the same as in 1953 in Louisiana, Virginia, and Illinois, but possibly more serious in Iowa where little trouble was experienced in 1953.

Infestations, on the other hand, were much smaller in Connecticut and Delaware, and generally less severe in Indiana but definitely more damaging in the northwestern part of the latter State. Armyworm infestations were relatively lighter, about one-fourth as great, in Kentucky and much lighter in Maryland, South Carolina and Ohio, but heavier than average in the latter State.

The insect was more widespread in Michigan, but less severe in affected areas than in 1953. Although Kansas had only spotted infestations in 1953, the 1954 outbreak was the most serious in several years. This was probably due to heavy moth flights into the State.

Many states outside the general area of infestation in 1953 reported destructive outbreaks in 1954. Vermont had its first attack since 1938 and New Hampshire recorded spotted infestations in all counties. Large flights of moths into Minnesota and favorable weather conditions provided a serious situation in that State. Large populations appeared in Nebraska, probably due to earlier than usual arrival of moths.

The population in North Dakota was the highest in many years. Heavy moth dispersal during June and favorable conditions are believed responsible. The damaging infestations in South Dakota were also due to moth flights. Higher than average temperatures in the irrigated areas may have been responsible for the build-up in New Mexico. Infestations of considerable importance were also reported in 1954 from Wyoming, Montana and Colorado.

Of the many kinds of plants listed as being attacked by the armyworm, the most frequently mentioned by most of the States were oats, corn, wheat, barley, alfalfa, clover and timothy. Some of the other hosts included grasses (Bermuda, orchard, blue, brome, Sudan, Johnson, fescue), grain sorghum, flax, millet, rice, sugar beets, mint, and clover.

Several States, including Louisiana, Florida, Virginia, Maryland, Pennsylvania and New Mexico attribute infestations to local sources; while Kentucky, Tennessee and Delaware infestations were reported due to factors both within and outside the States. Missouri had a small carryover in the southern area, but most of the trouble came from moth flights from outside. The third-generation outbreak in late August in this State was of local origin.

In Indiana, it is believed that there were isolated areas in which the insects lived over and these gave rise to later populations. The majority of the States, especially the more northern, indicate that infestations arose from moth migration into their territories from outside areas. Illinois, Iowa, Kansas, Michigan, Wisconsin, Minnesota, Nebraska, South Dakota and Wyoming are included in this category.

According to the questionnaires, weather was listed as the factor responsible for development of infestations in most cases. Unusually mild and dry conditions, and rank growth of vegetation during early spring are believed responsible in Arkansas. The South Carolina infestations appeared in lush grain, earliest in barley. Dry fall, mild winter, and cool wet spring were contributing factors in Tennessee while Kentucky had an early dry spring with rainy cold May which prolonged hatching. Virginia attributes its problem to a heavy

(Continued on page 20)

NITROGEN

YOUR INVESTMENT
FOR HIGHER YIELDS



FREE FLOWING
MOISTURE RESISTANT
33.5% NITROGEN

COMMERCIAL SOLVENTS CORPORATION



Nitrogen the heart of the harvest

"In my book . . .

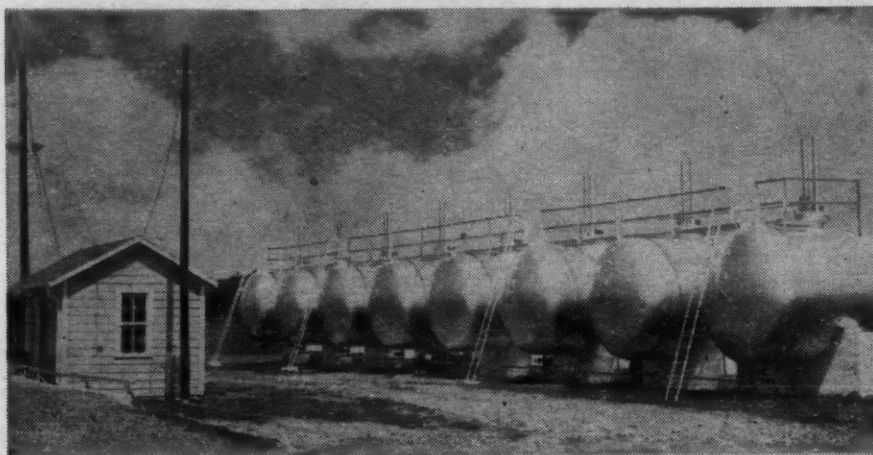
Nothing Beats Experience!

That's why we picked

EDWARD S. NELSON, Ltd.

to engineer and install our 240,000 gallon ammonia storage plant near Greenwood, Mississippi."

MIKE CARTER
FARMER'S SUPPLY CO.



In a highly technical, specialized field such as the engineering and construction of anhydrous ammonia storage plants, there's no substitute for experience. That's why Edward S. Nelson, Ltd. has installed more ammonia bulk storage systems than any other firm in the country. Storage plant operators in this fast-growing industry specify SYSTEM NELSON because they know they're dealing with an experienced organization, equipped to do the best job possible. If you're considering ammonia storage, you'll profit by a meeting with one of our sales engineers. There's no obligation. Contact us, today!

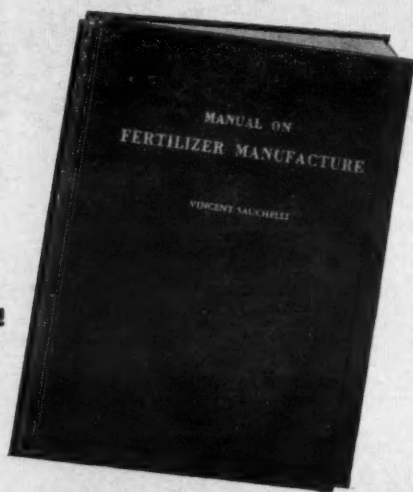


This SYSTEM NELSON emblem appears on over 250 anhydrous ammonia storage installations in 25 states. It's a symbol of quality backed by the finest technical engineering experience available . . . your assurance of long years of dependable performance.

EDWARD S. NELSON, Ltd.

P. O. Box 461 Phone LD 9969
Clarksdale, Mississippi

The Leading Name in the Ammonia Storage Field!



MANUAL ON FERTILIZER MANUFACTURE Second Edition

By Vincent Sauchelli, Director of Agricultural Research,
Davison Chemical Co., Div. W. R. Grace & Co.

WHAT THE REVIEWERS SAY:

"The best and most up-to-date volume on superphosphate and mixed fertilizer manufacture." . . . "A valuable fund of information—a ready aid to plant supervisors and operators. The terminology is excellent and the technical sections are treated in such a way as to avoid the more intricate chemical reactions, and at the same time indicate many important types of chemical and physical behavior in materials and mixtures." . . . "The author is to be commended on the sharp differentiation drawn between subject matter based on untested theory or claims and that based on technical proof and practical experience. The book should be valuable to those engaged in research in fertilizers as well as to plant supervisors and operators."

\$4.50 per copy—Order from

Croplife

2501 Wayzata Boulevard
Minneapolis 5, Minnesota



NITROGEN GROUP OFFICERS—New officers of National Nitrogen Solution Dealers Assn. named at recent convention in Omaha are seen here. Top photo (L to R): John White, John White Fertilizer Co., Auburn, Neb., secretary; Richard Cecil, American Nitrogen Co., Dayton, Ohio, vice president; George Serviss, GFL Soil-Building Service, Ithaca, N.Y., treasurer; and Wayne Johnson, Johnson Bros. Mills, Shenandoah, Iowa, president.

Lower group comprises the Association's board of directors. Back row (L to R): W. H. Schelm, Schelm Bros., Inc., E. Peoria, Ill.; Roy Broyhill, Broyhill Co., Dakota City, Neb.; B. B. Woodward, Planters Cotton Oil Fertilizer Co., Rocky Mt., N.C.; A. J. Schuler, Welcome Agri. Chem. Co., Welcome, Minn.; Don Foster, Nitrogen Solutions, Ottawa, Ohio; and William B. Spargur, Delavan Mfg. Co., West Des Moines, Iowa. Seated in front are the officers, Messrs. Johnson, Cecil, Serviss and White, all of whom serve as members of the board. (Complete report of the meeting appears on page of Croplife, issue of March 21.)

Projects Planned at Illinois Research Center

URBANA—A dozen or so research studies on the soils and crops problems of southern Illinois will get under way this spring and summer at the Cooperative Agronomy Research Center in Carbondale. The center, established last September, is a joint project between the University of Illinois and Southern Illinois University.

This year will see start of research in weed control, phosphate fertilizer placement, forage mixtures and variety research in Sudan grass, forage sorghum, soybeans, alfalfa, birdsfoot trefoil, medium red clover, orchard grass, tall fescue, bromegrass and timothy.

The research center is under the supervision of a five-man advisory board that includes A. L. Lang and M. B. Russell, University of Illinois agronomists; W. E. Keeper and J. P. Vavra of Southern Illinois University, and E. F. Sullivan, who is in charge of the center and is paid by both universities.

Crete Mills Introduces Line of Pesticides

CRETE, NEB. — The Crete Mills, Crete, Neb., division of Lauhoff Grain Co., is introducing a new line of farm and home pesticides this month.

The new line of pesticides primarily will be marketed through established Victor feed dealer outlets. It is made up of crop sprays, grain fumigants and sprays, household bug and fly sprays, brush and crab grass killers, rodenticides, and dairy and beef cattle sprays.

William Schoenherr, chief entomologist for the Lauhoff Grain Co., will be in charge of the new department. He will be assisted by E. W. Anderson.

The Victor pesticides will be labeled under the Victor brand name.

USDA Recommends Heptachlor for Alfalfa Weevil Control in East

WASHINGTON — Mid-April application of the insecticide heptachlor at the rate of 4 oz. per acre is recommended to eastern farmers and cattlemen for the control of the alfalfa weevil by entomologists of the U.S. Department of Agriculture's Agricultural Research Service. They report that their trials have proved heptachlor to be effective and safe for use against this new insect threat to alfalfa production in the east.

In 1954 trials, use of heptachlor sprays on April 21 knocked out large infestations of alfalfa weevils and kept their numbers at low levels through the cutting of the first hay crop in early June, according to USDA. Adjacent untreated alfalfa fields were a total loss because of weevil-feeding.

Although the alfalfa weevil has been known—and successfully controlled—by growers in such western states as Utah and Idaho for many years, it is a new pest of eastern alfalfa. It was first found in the region in 1952, in Maryland. Since then, entomologists have identified the insect in Delaware, New Jersey, Pennsylvania, Virginia and West Virginia. It is becoming increasingly destructive.

SEED SHORTAGE

ATLANTA—Georgia farmers and seed producers may have trouble getting good seed for planting some crops this spring. S. V. Stacy, head of the Agronomy Dept. of the Georgia Experiment Station, Experiment, Ga., says there will be ample supplies of foundation and registered seed for planting some crops but shortages of others. Primary cause of seed shortages this year was the drought this past summer.

Douglas Chemical Produces New Grain Protectant

KANSAS CITY—A new grain protectant, applied at the time of binning as a wet spray to repel grain insects during storage, is being put on the market by the Douglas Chemical Co., Kansas City. Suitable for bin or commercial elevator use, the product was introduced at a luncheon meeting here April 4 with a report by Donald A. Wilbur, professor of entomology, Kansas State College, who has conducted tests of the new product for the past three years.

The product is a formulation of ethylene tetrachloride, petroleum distillate, piperonyl butoxide and pyrethrins. It is covered by U.S. Patent 2,706,700. Prof. Wilbur said the results were obtained by applying the spray at the rate of 2 gal. each 1,000 bu. wheat. This would represent a cost of about 2½¢ bu.

Prof. Wilbur said the protectant is particularly effective against the grain beetle, the saw-tooth grain beetle, flat grain beetle and some other insects that annually destroy millions of bushels of wheat. He bases his conclusions on the performance of the product in a comprehensive program conducted on wheat farms in Harvey County, Kansas, which was initiated in 1952. In the final stage last year the program embraced 83 bins on some 30 farms, bins averaging about 800 bu.

At the same time, extensive tests of the material on a commercial scale have been conducted in numerous elevators from Colorado to Iowa, company officials said. About 10 million bushels of wheat were treated in these commercial elevators the past three years with the protectant. The effective results obtained in the farm bins, according to reports made by company representatives at the meeting.

Through experimentation, Prof. Wilbur determined the most practical method of spray, a narrow-mouth quart calibrated to show how much of the protectant is being applied. When the protectant is sprayed on grain in storage, much of the liquid evaporates, leaving only a small deposit of a toxicant used in many food processing plants. The newly developed product in no way affects germination.

"Grain that is treated as directed is perfectly safe for human and livestock consumption," Prof. Wilbur said. "The protectant method is in line with the grain sanitation program for 'clean wheat'."

Only wooden bins were used in the farm tests, Prof. Wilbur explained, because they offer the most favorable conditions for the survival of grain storage insects. They are difficult to clean and the pests thrive in the cracks and crevices. He recommended that the protectant be sprayed on the wheat as it enters the bin, rather than at the combine. "We have demonstrated to our full satisfaction," Prof. Wilbur said, "that the protectant method of wheat treatment at the farm bin level is practical and effective and is a valuable addition to chemical control measures for grain infesting insects. It is the only method that we know of for the treatment of wheat stored in bins too loose for effective fumigation as in the case of so many farm bins."

In farm bin storage, the product can be applied by hand with a special sprayer, or where steel bins are used by vacuum or mechanical conveying equipment, means have been devised to move the grain through the spray of the protectant before it enters the bin. For commercial elevator use, an applicator has been developed which sprays the grain just before it is dumped from the conveyor belt at the top of the bin. The Douglas Chemical Co. will

market the product in 22 states under the name of Tetrakote. It will be distributed through country elevators, local farm supply stores, farmers' cooperatives, seed stores, feed stores and other outlets for insecticides and fumigants. The hand applicators, retailing at less than \$10, also will be available from the same sources.

Pfizer Locates In Canada

TORONTO — Chas. Pfizer & Co., Inc., is to build an antibiotics plant at Arnprior, Ont., according to John A. Davenport, executive vice president of the company.

The whole project will cost several million dollars and expansion will take place over a number of years. Work on the initial facilities is expected to start in April with completion slated for October. This first unit will provide employment for about 100 people.

Scientists Conducting Bioclimatic Studies Of Mexican Fruit Fly

BERKELEY, CAL. — Bioclimatic studies to determine if the Mexican fruit fly, which has recently become a serious pest in Southern California, could become established in that area, should it cross the border, are now being conducted by the University of California and entomologists of the U.S. Department of Agriculture.

Climates of various Southland agricultural areas are being simulated in large refrigerator-like cabinets that permit temperatures and humidities to be varied according to daily and seasonal fluctuations experienced in those localities. Climates are now being simulated are those of Riverside, El Centro, and Chula Vista.

The experiments are being conducted at the USDA entomological laboratories in Brownsville, Texas, where the Mexican fruit fly is a sea-

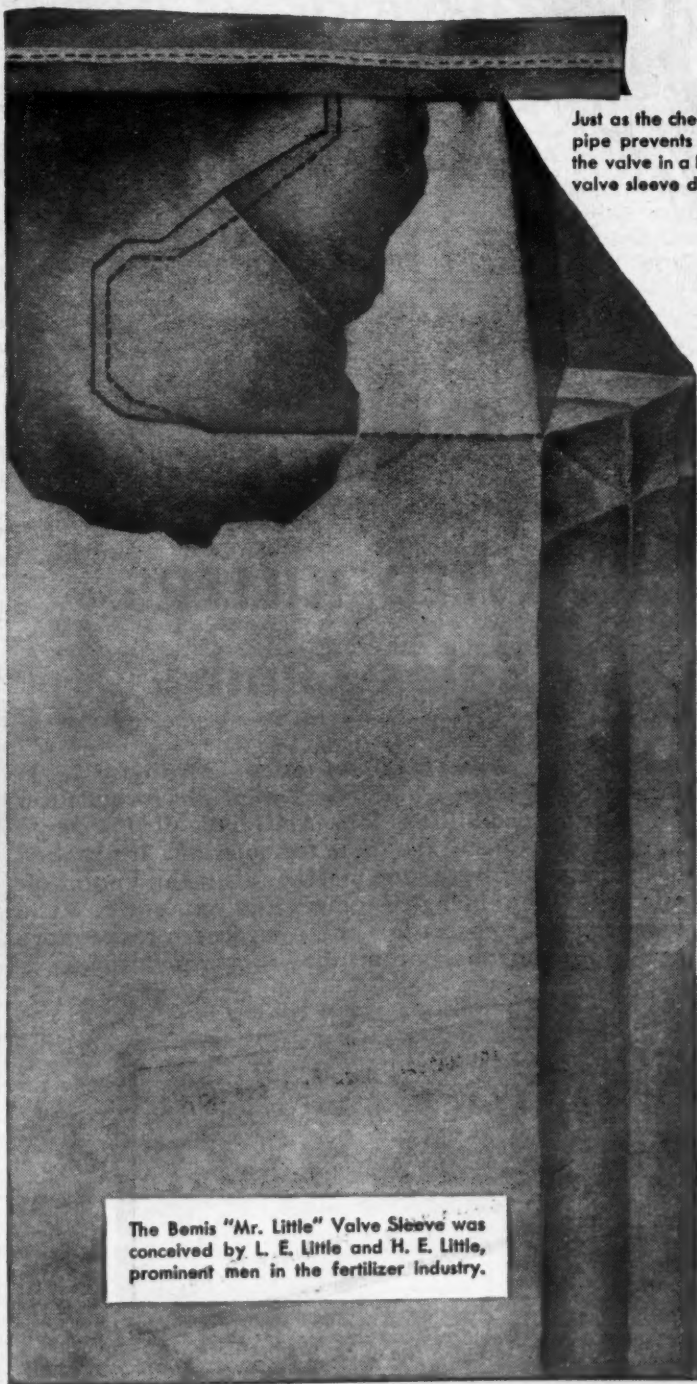
sonal pest. Directing the work are Dr. P. S. Messenger, of the University's Department of Biological Control, and Dr. N. E. Flitters of the USDA Entomological Research Branch.

Similar tests conducted in Honolulu, Hawaii, by the scientists indicated that the Oriental fruit fly, a cousin of the Mexican pest, would not survive the hot summers in semi-arid interior areas of California, nor the winters in any parts of the state other than possibly the Imperial Valley just north of the Mexican border.

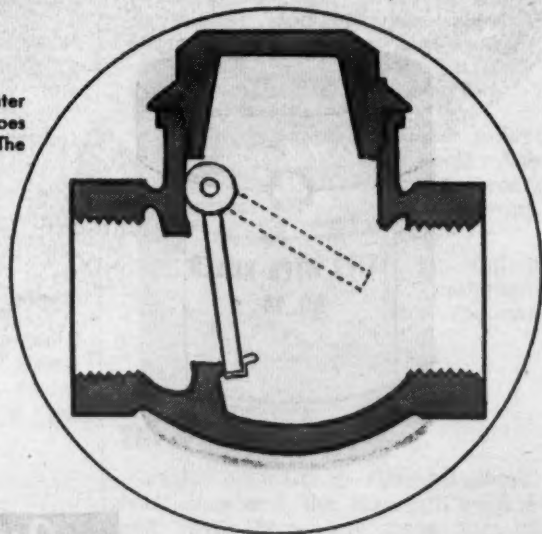
In addition to determining if certain areas are favorable to establishment of the Mexican insect, the experiments will also enable the entomologists to predict the effects of other climates on the fruit fly.

Evidence thus far indicates that as long as adequate food supplies are available, the length of the life cycle of the insect is almost completely governed by temperatures.

The most revolutionary Multiwall Bag development in years! the NEW Bemis "Mr. Little" Valve Bag*



Just as the check valve in a water pipe prevents back flow, so does the valve in a Bemis Multiwall. The valve sleeve does the trick.



Maximum Sifting Protection—Creases in the valve sleeve—a new principle—give a faster-acting, tighter closure particularly with troublesome granular or pelletized products. It really seals in the bag contents.

Valve Corner Moisture Protection—Since bag contents do not get into the valve pocket, "wick" action that draws moisture into the bag is avoided.

Cleaner Packing—Handling—Shipping—No more spilled fertilizer on packing room floors and conveyors; no more dirty cars received by your customers.

Ask your Bemis Man for the complete details. He'll gladly show and demonstrate the revolutionary new "Mr. Little" Valve Bag. Write or call him today.

Bemis



General Offices—St. Louis 2, Mo.
Sales Offices in Principal Cities

*Pat. Applied for

The Bemis "Mr. Little" Valve Sleeve was conceived by L. E. Little and H. E. Little, prominent men in the fertilizer industry.

Frontier Chemical Plans \$6 Million Plant Expansion

WICHITA—Plans for a \$6 million expansion at the plant of the Frontier Chemical Co., Wichita, were approved recently by the board of directors of the parent company, Union Chemical & Materials Corp.

The program will double the present output of chlorine at Frontier.

James H. Clark, president of Union, said that the expansion will include two phases. One is a \$4 million project for the chlorine facility and the other is an improvement program for producing end products from the chlorine.

A principal product will be carbon tetrachloride, for use in fumigating grains and for other purposes, Mr. Clark said.

Little Loss to Air From Ammonia Put In Irrigation Water

DAVIS, CAL.—Ammonia fertilizer can be applied in irrigation water through sprinkler systems without important losses to the air, according to recent research.

Keeping the acidity of the solution close to neutral is the proper procedure suggested by experimenters on the Davis campus of the University of California. Studies by irrigation professors Delbert W. Henderson and Lloyd D. Doneen have established that the amount of loss of ammoniacal fertilizers from sprinkler jets is chiefly affected by the acid-alkaline balance of the fertilizer solution.

This principle applies to all the common ammoniacal fertilizers tested—aqua ammonia ammonium sulfate, mono-ammonium phosphate and ammonium nitrate. However, aqua am-

monia increases alkalinity and the other fertilizers increase acidity, the researchers said.

The results obtained—both by varying the concentration of fertilizer and the pH of the solution—indicate that ammonia losses are only minor at pH 7 or below, rise to 10% around pH 8, and increase rapidly above that point.

Cincinnati Fertilizer Company Incorporates

CINCINNATI—The Green Belt Chemical Co. was incorporated last week to manufacture and sell commercial fertilizers. It lists 6,000 "A" shares and 2,000 "B" shares, all no-par common stocks, and will begin operations with \$200,000 capital. The incorporators, Charles W. Croger, N. E. Miller and Walter R. White, announced that a plant will be located in northern Ohio with headquarters here.



Ulay K. Wise

Ulay K. Wise Named Alabama Representative For Spencer Chemical

KANSAS CITY—Ulay K. Wise has been named Alabama representative for the Spencer Chemical Co. Kansas City.

Mr. Wise went to Spencer from three-year tour of duty with the State Department, including service as veteran affairs officer in Paris and embassy work in Rome. Previous to that time, he was in an agricultural role with the Veterans Administration.

From July, 1947, to May, 1949, was in charge of a unit administering the on-the-farm training program and from then until 1951 was agricultural training officer.

A graduate of Auburn (Alabama Polytechnic Institute) in 1941, Mr. Wise first worked as assistant county supervisor with the Farm Security Administration before entering the service. In World War II, he became an armament officer with a night fighter squadron. Mr. Wise is married, and the family is making home in Montgomery, Ala.

Farm Chemical Firm Incorporates in Kansas

SALINA, KANSAS—Incorporation procedure has been completed by the A-C-E Supply & Equipment, an agricultural, chemical and engineering supply firm here, with L. A. Laybourn as resident agent. Authorized capitalization is \$100,000. The new corporation will distribute agricultural chemicals, grain fumigants and insecticides in Kansas, Nebraska and Colorado.

The firm also markets the E-Warning temperature system, a device for recording temperatures grain elevators, quonset and farm bins. Warehouse facilities of the firm will be developed at Neodesha, Victoria, Kansas, and Fairmont, McCook, Neb.

Price Set for DDVP For Experimental Use

NEW YORK—Montrose Chemical Co., Newark, N.J., has established a price of \$3.50 lb. for DDVP (methyl dichlorovinyl phosphate) properly-qualified commercial organizations. DDVP, which is being made by Montrose on a pilot plant scale for experimental purposes only, being supplied in reasonable quantities to the government, universities and similar public institutions at charge.

The company said that, while it is difficult to forecast prices until eventual applicability and volume are known, it is the belief of Montrose that the price range of the 100 technical material will be between 50¢ and 75¢ lb.



Sell these **Pittsburgh** WEED KILLERS and watch your 2,4-D Sales Climb!

There's a basic reason why you can increase your 2,4-D sales and profits with Pittsburgh Weed Killers. These field-tested herbicides consistently provide more uniform and dependable weed-killing results because they're Quality-Controlled from coal to packaged product at our basic and integrated agricultural chemical plant. This basic assurance of quality is your assurance of increased sales and satisfied customers.

Pittsburgh's broad family of tested, easy-to-use 2,4-D formulations enables you to sell the right formulation for every weed-killing job. And like all Pittsburgh Agricultural Chemicals, these formulations are backed by a complete advertising, merchandising and point-of-sale program to bring customers into your store. Write today for full information on how you can make more agricultural chemical profits the "Pittsburgh" way.

Standard for Quality

For immediate information about Pittsburgh Agricultural Chemicals, write or call your nearest Pittsburgh Coke & Chemical office at:

Atlanta • Los Angeles • Chicago • Dallas
Memphis • Minneapolis • New York • San Francisco
St. Louis • Walla Walla • Omaha • Denver



Better Selling

A SPECIAL CROPLIFE DEPARTMENT TO HELP RETAILERS IMPROVE MERCHANDISING KNOW-HOW



SHOP TALK

OVER THE COUNTER

FOR THE DEALER

By EMMET J. HOFFMAN
Croplife Merchandising Editor

Price cutting and its evils were the subject of an informal discussion the other day by some industry people. One of them—an old-timer in the selling field—recalled a timely and humorous fable which tells as much as a whole textbook on the subject. The story goes like this:

Abba Kababa, so the ancient story goes, claimed that he owned a herd of the smartest donkeys in the entire kingdom. The king, having heard of his boasting, came to test their wisdom. Addressing the donkeys, he said, "If I were crossing the desert and wanted to hire a donkey, what wage would I have to pay?" The donkeys withdrew a little distance to consult with each other and then a spokesman stepped forward, "Three bales of hay and three bags of dates would be a fair wage."

And Abba Kababa was very much pleased with their judicious conduct and their wise offer. But the king spoke again, "Now listen well. Tomorrow at sunrise I will start on such a journey, but I will not pay so much. Which one of you will go for less?"

And again the donkeys withdrew to counsel with each other and soon there was great confusion amongst them and much braying and kicking and biting each other. Finally, one particularly long-eared ass came forward and said that he would go for one bale of hay.

The king said, "Fool! That is a long journey. One bale of hay would not suffice for food alone, and there would be no profit."

"That is true," said the donkey, "but I want the business."

And ever since that day jackasses have been known as fools and "price cutters" known as asses.

Take a Good Look

Now that spring is here, it's time to take a critical look at your store front, delivery trucks and highway signs to see how they came through

the winter. Look a little weather-beaten?

If you think they need a new coat of paint, your customers will also think the same thing. The condition of your store, trucks and signs reflects your attitude toward your business and customers. It's an indication to customers and prospects of what to expect of your store.

It's hard to decipher a highway sign that is dilapidated. What's more important, it seems to shout to the passer-by: "This is a shoddy looking sign and you can expect the same kind of service and merchandise at this business. You had better shop elsewhere."

Take a good look around today. Be objective when you look. Ask yourself: "What do my customers think when they see this store front, this truck and this sign?"

Paint doesn't cost a lot and it can give your store and equipment a lot of snap. That's what the customers like.

Wind Erosion a Threat in Colorado

FORT COLLINS—General drouth conditions and the resultant lack of soil cover have put large farming areas of eastern Colorado in a position vulnerable to wind erosion this spring.



POWER LINE SPRAYING—Shown above is a helicopter from Stull's Chemicals, Inc., San Antonio, spraying the right-of-way of a power line in rugged terrain. The helicopter carries 40 gal. spray on each trip and about 36 gal. are used on one mile of brush, 100 ft. wide

Helicopter Provides Answer to Industrial Right-of-Way Spray Problems in Rugged Terrain

Stull's Chemicals, Inc., San Antonio, Texas, realizing the need for a more effective and economical method of controlling weeds and brush on industrial rights-of-way, feels confident it has found an answer to the problem. The answer is helicopter. This amazing little "grass-hopper" has a maneuverability that takes it where the angels fear to tread.

For the past two years, Stull's Chemicals has been applying chemicals for brush control with the helicopter in areas so tough, men, tractors and conventional "fixed wing" aircraft wouldn't dare to go; and at a price lower than ground equipment could match on level ground.

The firm is offering a complete service of custom application. This includes chemical, application, complete liability coverage and all personnel necessary for the work.

Most of the spraying has been done in Missouri, Arkansas, Kentucky and Tennessee. The firm has sprayed for Southwestern Bell Telephone Co. and Union Electric, with the majority of the work for REA. It has sprayed about 100 miles of lines for the Arkansas Power & Light Co., in the mountains of North Arkansas.

The helicopter carries 40 gal. spray on each trip. Approximately 36 gal. are used on a mile of brush 100 ft wide.

In order to effectively spray the right-of-way, the pilot must fly his machine about eight or ten feet above the shield wire and make three passes down the line—once up each side, once down the middle.

Most of the spraying is done from about 5 a.m. to 7:30 a.m. and 5 p.m. to 7:30 p.m. when the wind velocity is lowest. The downward blast of the

air from the helicopter's "revolving wing" helps place the spray in the desired area.

The operating crew is small and efficient. They move from location to location on schedule. The helicopter is not forced to fly long distances in transporting its load. It normally lands for refueling within a stone's throw of the line being sprayed.

When the day's work is done, there is no muss or fuss picking up pieces and patching fences. The residents in the area where work is being done are, for the most part, keenly interested in the equipment and work it does. Mr. Stull feels that their satisfaction and goodwill is a definite asset to the companies they serve.

NEW MARKET FOR FARM CHEMICALS

Columbia Basin Crop Value Jumps 80%

EPHRATA, WASH.—Washington's growing Columbia Basin project harvested crops valued at \$16,253,000 in 1954—a gain of 80% in a year—the Bureau of Reclamation announced recently.

Crop value was up from \$9,000,000 in 1953 and \$4,680,000 in 1952. Acreage under cultivation rose from 65,300 acres in 1953 to 104,000 last year. The average gross value per acre for the 1954 harvest was \$155.43.

The bureau report said the 1954 weather was the most erratic since water was first delivered to block 1 (near Pasco) in 1948. A report in June indicated that bureau agriculturalists expected far lower yields in 1954 than in 1953 because of cool, windy weather which made planting operations difficult and retarded growth of some crops. The guesses

proved wrong. Yields were up on almost every crop of the 42 listed in the report.

Anxiety of basin farmers to get off to a good start on their units was reflected in the gross values of cash crops grown.

Beans occupied more than a third of the project acreage and accounted for a gross return of more than \$5,000,000. Late potatoes occupied 6,355 acres, yielded 44 bu. to the acre and were valued at more than \$2,500,000. Early potatoes were grown on 2,704 acres, yielded 514 bu. and were valued at \$1,000,000.

Sugar beets, grown on 8,250 acres, yielded 24.6 tons to the acre and produced a gross return of \$2,000,000 before federal payments.

Forage crops, of which alfalfa hay was the most important, were produced on 16,000 acres. Gross return from these crops totaled \$1,367,000. Grains were grown on more than 20,000 acres. Wheat on 12,000 acres averaged 43 bu. to the acre and produced a gross return of more than \$1,000,000. Field corn, harvested for grain on more than 4,000 acres produced a return of \$400,000.

Peas grown for seed were an important enterprise with more than 5,000 acres devoted to this crop. Clover seed was harvested from about 200 acres and commercial vegetables exclusive of potatoes were grown on 2,900 acres for a gross return of \$500,000.

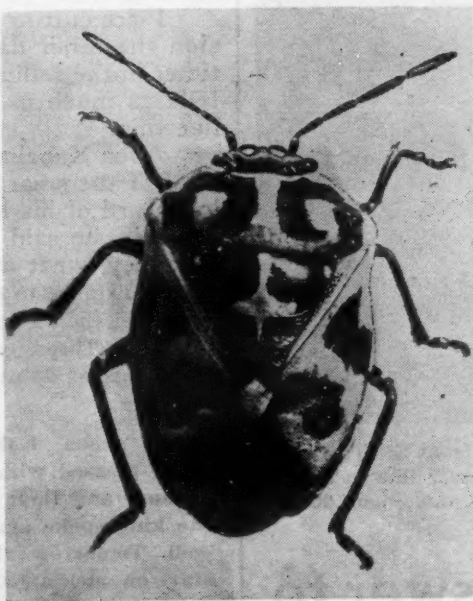
Fruit production was of minor importance in 1954. New orchards have

(Continued on page 14)

BUG OF THE WEEK

Mr. Dealer Cut out this page for your bulletin board

Harlequin Bug



How to Identify

As shown above, the harlequin bug is broad and squat. In life, it is about $\frac{3}{8}$ inch long and is spotted, red and black. From early spring to the winter months, it can be found in various stages of development. Nymphs look quite similar to adults.

Damage by Harlequin Bug

Although this insect attacks many kinds of vegetables, fruit trees and field crops, it does its greatest damage on cabbage and related crops. It feeds on cauliflower, mustard, horseradish, turnips and Brussels sprouts as well as on cabbage. Its damage lies in sucking sap from plants, causing them to wilt and usually to die. If not controlled, harlequin bugs will destroy an entire crop. It resides in the southern half of the U.S. and is said to have entered this country from Mexico.

Life Habits of Harlequin Bug

Eggs, laid on underside of leaves, hatch in from 4 days to a month, depending upon the warmth of the climate. The young start feeding on plants almost immediately after being hatched. They continue to feed and to grow

for one to two months and develop through five distinct instars before reaching the stage where they can mate and lay eggs for a succeeding generation. Thus, the harlequin bug may bring forth three generations and part of another in a season. Only the adults are able to survive winter weather in the northern range of their existence.

Control of Harlequin Bug

Chlordane at 1 lb. an acre has been satisfactory in control of this pest, and chlordane dusts as low as 2% are said to be effective. Toxaphene, 10% dusted at 40 lb. an acre or spraying at 2 lb. 50% wettable powder to 100 gal. water is similarly effective, as is DDT, 10% dusted at 40 lb. an acre or sprayed at 2 lb. an acre, 50% wettable to 100 gal. water. Nearer harvest time, dusts or sprays of rotenone are advised, or dusting with 20% sabadilla is suggested in the literature. In smaller cabbage areas, it is possible to use cultural means of control such as keeping the patch free of weeds which harbor the pest, and even picking the bugs by hand and destroying them. Obviously, however, the latter is far too time-consuming for anything other than in a very small area.

Picture of harlequin bug furnished Croplife through courtesy of U.S. Department of Agriculture.

Previous "Bug of the Week" features are being reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Croplife Reprint Dept., Box 67, Minneapolis 1, Minn.



The unpaved country was mighty muddy, during thaws. Farmers waded their boots to slosh through fields and barnyard, drove their autos, off the country roads, highways, they left mud for long stretches.

One of these boys came into the farm Schoenfeld & Mc... every step a little on the black asphalt man was Pete M... prosperous farmer.

"Pat," yelled I... is April and I have... lizer I need sta... What's the matte... in here? You mu... switch. Why hav... to get that fert... stored?"

"Don't tell me... all that mail we've... all winter?" Pat... out lots of letters... buy fertilizer earl... what analysis the... stored on the farm.

"Oh, I never... class stuff," gro... comes in by the... first class it's a... read that."

Pat cast a look... been Pat's conten... fertilizer custome... class mailing rat... letter, just to... frugal Oscar had... fuss about the... Pat had given in... did not look u... although he de... talked in loud vo... would be sure to...

"I also called... times to see yo... reminded Pat, "you were out fo... can't say I didn't..."

"Huh," grinned... farmer's got to... tion. I hate Can... and I'm no good... can hit foxes. Bu... with you fertiliz... that you're all m... money, and so y... enough on good...

Oscar did not... at this barb, a... with anger. Mo... customer, usual... (Oscar often th... him that bills w... maximum) and s... held his tongue.

"Yeah, we ma... Pat said grinnin... hunted foxes f... Just can't affor...

"You can't fo... drawled Pete M... in a chair and c... booted leg over... how some guys... if they get a c... toity."

"Who's gettin... asked puzzledly.

"Well," went... voice. "I ain't m...

Doing Business With

Oscar & Pat



The unpaved country roads were mighty muddy, due to the spring thaws. Farmers wore heavy rubber boots to slosh through the mud in fields and barnyards, and when they drove their autos, trucks or tractors off the country roads onto the paved highways, they left black blobs of mud for long stretches.

One of these booted farmers now came into the farm supply store of Schoenfeld & McGillicuddy, and at every step a little mud dropped off on the black asphalt tiled floor. The man was Pete McNulty, a portly, prosperous farmer who lived on Rt. 2.

"Pat," yelled McNulty, "here it is April and I haven't got the fertilizer I need stacked in my barn. What's the matter with you fellows in here? You must be asleep at the switch. Why haven't you told me to get that fertilizer bought and stored?"

"Don't tell me you haven't opened all that mail we've been sending you all winter?" Pat smiled. "We mailed out lots of letters urging farmers to buy fertilizer early, so they could get what analysis they want and get it stored on the farm for ready use."

"Oh, I never read all that third class stuff," growled McNulty. "It comes in by the bale. 'Course with first class it's a little different. I read that."

Pat cast a look at Oscar. It had been Pat's contention that all regular fertilizer customers warranted a first class mailing rate, even on a form letter, just to get attention, but frugal Oscar had kicked up such a fuss about the extra postage that Pat had given in to him. Now, Oscar, did not look up from his desk, although he detested people who talked in loud voices so that others would be sure to hear.

"I also called at your house two times to see you about fertilizer," reminded Pat, "but your wife said you were out fox hunting. So you can't say I didn't try to warn you."

"Huh," grinned McNulty. "Well, a farmer's got to have a little recreation. I hate Canasta and taffy pulls, and I'm no good at poker, but I sure can hit foxes. But I guess the trouble with you fertilizer dealers today is that you're all making too darn much money, and so you don't follow up enough on good customers."

Oscar did not raise his head, even at this barb, although he seethed with anger. McNulty was a good customer, usually paid in 45 days (Oscar often thought of reminding him that bills were due in 30 days maximum) and so now Oscar wisely held his tongue.

"Yeah, we make so much money," Pat said grinning, "that we haven't hunted foxes for about ten years. Just can't afford the time."

"You can't fool an old farmer," drawled Pete McNulty, sitting down in a chair and crossing a mud caked, booted leg over the other. "Funny how some guys git up in the world if they get a chance and go hoity toity."

"Who's getting hoity toity?" Pat asked puzzledly.

"Well," went on McNulty in a loud voice, "I ain't mentioning any names,

but last Sunday night when my wife and me got into town just before the first show, we hadn't eaten yet, so we went into the Hotel Gatsby to get one of them 85¢ poached egg suppers. Figured that's all we could afford, what with farm prices bein' what they are."

"Did you see a good show?" Pat asked.

Oh, the show was good enough," McNulty said, "but as I was sayin' about the Hotel Gatsby, I walks into the lobby to get a cigar after the meal and I could look right into the big dining room—you know, 'he spot where prices are about a dollar a meal more than they are in the coffee shop."

Pat still looked puzzled.

"Who do I see in there except a certain fertilizer dealer from this section," Pete McNulty drawled, "and he really was laying into a big plate of pigs knuckles, sauerkraut and some cheese you could almost smell way out in the lobby."

A chair whirled rapidly, and a livid faced Oscar gazed upon Pete McNulty. "T—that was me!" he barked. "And my wife and Rev. A—Alt-schammer. He dropped in late in the afternoon and we—we didn't have a thing in the house. When he mentioned he liked pigs knuckles, Minnie invited him to the hotel dining room before I could stop her. So it was pigs knuckles all the way around."

"Y—you don't have to make excuses," chided Pete McNulty. "I like to eat, too, but jest as I was sayin' only fertilizer dealers who are rolling in dough can afford to tackle one of them \$2.50 pigs knuckle dinners, with all the trimmings."

"We are not making a lot of money!" Oscar almost shouted. "Ach Himmel, we are having a hard time keeping our head above water what with all this price cutting and chiseling that's around nowadays, and how slow farmers are in paying their bills and all that."

"Hey, wait a minute," snapped McNulty, his face getting red. "I'm paying my bills, ain't I? I don't owe you guys nothin' right now. You ain't lost a cent on me. I don't like guys who say I'm slow pay."

Oscar's face was pale. "I didn't say you were slow pay. I said some farmers are slow in paying. You should sit in my chair for a month and you would see what I mean." Plainly agitated, Oscar got to his feet. "I haven't had a \$2.50 dinner in eighteen years!" he exploded.

"I don't believe in them. But I couldn't help it, because Minnie talked so much—and, and then you had to see me in the dining room." Oscar strode past Pete McNulty out into the warehouse in the direction of the men's room.

Pete McNulty grinned. "Maybe I was a little rough on him, Pat, but I sure like to needle guys like that. Why can't Oscar take a joke?"

"Because he isn't made like that, Pete," Pat said patiently. "Everybody lacks something or other—let's be frank and admit it. Poor Oscar just wasn't made to laugh. I feel sorry for him. But let me tell you something about that guy."

"What? Is he a bigamist?" asked

McNulty, his eyes lighting with interest.

"No," Pat said seriously. "Maybe Oscar doesn't appreciate a joke, but he's as honest as the day is long, Pete. He'll never beat anybody out of a penny, or a pound of fertilizer. If you buy something from Oscar you'll get your money's worth, right down to the last figurable ounce—but no more. You'll get no bargains, or concessions or two-day past discounts, but you'll be dealing with a very honest man. And that is something, too!"

"Yeah, I guess you're right," Pete said reflectively. "Maybe he's not such a bad old coot after all. Next time I see him I'll take him in somewhere and buy him a drink."

"He doesn't drink."

Pete's face fell. "Well, I'll think of something one of these days. Say, take my order for fertilizer. I'm uppin' my total about eight tons this spring. Maybe that will make Oscar feel a little happier. Maybe he'll like that better'n a drink."

At that remark both men laughed heartily at what they realized was actually a true statement about the inclination of one known as frugal Oscar Schoenfeld.

Cotton Insect Control Guide Issued In New Mexico

LAS CRUCES, N.M.—Under the direction of Richard C. Dobson, the New Mexico Agricultural Extension Service has issued its 1955 Cotton Insect Control Guide. Mr. Dobson, state entomologist, has saved farmers thousands of dollars during growing season by sending out his weekly insect reports. In it he describes the various insects, where infestations are found, and how farmers may prevent crop damage by treating fields before serious infestations develop.

In the new cotton insect control guide, he stresses early season control for aphids, thrips, fleahoppers and lygus bugs. He outlines a control plan for regular seven day applications of insecticides, but says this should stop 30 days before the first boll worms are due to appear in order to allow a build-up of beneficial insects.

Aside from listing all the insects which infest New Mexico cotton crops, the guide also gives the amount and kind of insecticide needed to combat them.

Lawns Are Big Business

BERKELEY, CAL. — Marston R. Kimball, agricultural extension specialist in ornamental horticulture of the University of California, estimates that more than \$250 million is spent annually in California to maintain ornamental lawns, and more than \$650 million is invested in these lawns. These figures represent about 160,000 acres of turfgrass area.



stands for

Fumigant Specialists

SOIL GRAIN INDUSTRIAL



SOIL FUMIGANTS

Larvacide (99% pure chlorpicerin). Controls most disease-causing fungi, weed seeds, nematodes and soil insects. Recommended for use in greenhouses, cold frames, seed beds, flats, compost and potting soils.

BROMEX—Contains methyl bromide in solution, for greenhouse and seed bed soils, to control rootknot nematode. Quick aerating. May be used in presence of living plants.

PESTMASTER Methyl bromide—with 2% chlorpicerin. For seed beds, etc.



INDUSTRIAL FUMIGANTS

Larvacide (99% pure chlorpicerin). Destroys insects and rodents in flour, feed and rice mills, grain elevators, seed warehouses, vaults and on farms. Its tear gas warning makes LARVACIDE a safer fumigant.

METHYL BROMIDE — A standard fumigant for many purposes.

LARVABROME—For fumigating where tight sealing is not possible. Combines the advantages of LARVACIDE and methyl bromide.

L-P SPRAY — Non-toxic oil formulation of activated pyrethrins for spot sanitation.



HORTICULTURAL SPECIALTIES include

Z. I. P. and NO NIB'L.—Taste repellents for deer, rabbits and field mice. Widely used by commercial growers and home gardeners.

MILDEX—A fungicide for eradicating powdery mildew of apples, cucurbits, roses and other crop plants.

PLANTEX—Anti transpirant for reducing moisture loss and enhancing survival of seedlings and woody transplants.

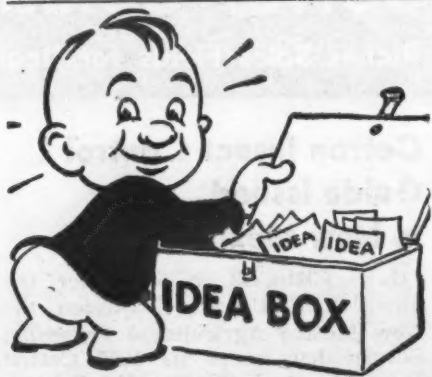
LARVACOVERS—8 gauge, extra sturdy vinyl covers to retain gas in fumigating soils, grain, etc. Florist green or clear.

Write for literature on any of the above products

Larvacide Products, Inc.

117 Liberty Street, New York 6, N.Y.

WEST COAST—1515 Third Street, San Francisco



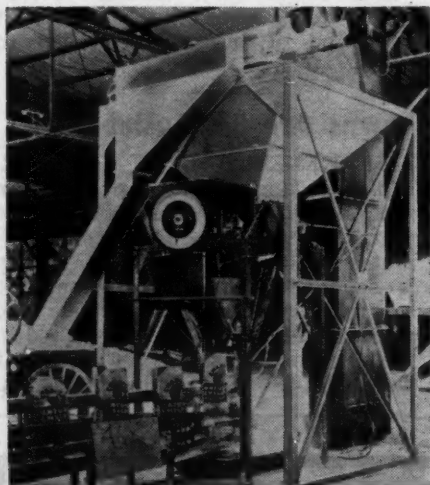
What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 5099—Bagging Machine

Union Bag & Paper Corp., sales agent for Inglett & Corley's new I & C bagger (model UB-101) has announced that the machine is ready for distribution. The machine works in conjunction with a moving conveyor and sewing head. The weighing and filling cycle is automatic. A



starter button automatically permits delivery of the pre-weighed material through the machine's bag chute in an endless series. The filled weight drops each of the open mouth multi-wall bags onto a moving conveyor belt which leads them through the

sewing head. A dial type scale is double-faced so that both the closing and filling operators can see it. This model will weigh units from 25 to 200 lb. A system of switches within reach of the bagging operator enables him to change weight units immediately by operating the switch covering the desired unit. To secure more complete details check No. 5099 on the coupon and drop it in the mail.

No. 5108—Lease Plan

Under a recently inaugurated lease plan, material handling equipment manufactured by Barrett-Cravens Co., may be leased for three years or five years to responsible companies. The plan is not primarily a tax-saving device, but all monthly payments that the customer makes are fully deductible for federal income tax purposes, a company announcement states. There is no option to buy the equipment either during or at the end of the lease. The lease does contain an option for the customer to extend the lease at the end of the three-year or five-year period. Available for lease are: hand lift trucks, electric lift trucks, pallet lift trucks, fork trucks, industrial tractors, skids, portable elevators and cranes, storage racks and material handling specialties. More information on the plan may be obtained by checking No. 5108 on the coupon and dropping it in the mail.

No. 5111—Bait, Dispenser

A new liquid bait for rodents and a bait dispenser now are being marketed by Donco, Inc., manufacturer of insecticides and rodenticides. Donco's water soluble rat and mouse killer, containing Pivalyn, is claimed



to be a tasty solution to rodents that is much more acceptable than plain water. One 1½ oz. package is mixed with a quart of water and poured into the liquid bait dispenser (see photo). Made of Styron, the dispenser is 5¼ in. high with a drinking trough 2¼ in. by ¾ in. This small evaporation area assures long term effectiveness, Donco indicates, without frequent fillings. To purchase a supply or for further information check No. 5111 on the coupon and mail it to this newspaper.

No. 5058—Tractor Shovel

The Frank G. Hough Co. announces production of an improved Payloader tractor-shovel with bucket capacity of 1 cu. yd. payload and ¾ cu. yd. struck load. Designated as the model HFC, it is a rear-wheel drive model and features a combination of special new transmission, plus torque-converter drive. The torque-converter is of the self-cooled, 3-element type which automatically multiplies torque output of the engine in direct proportion to the load requirements. The transmission is of full-reversing type, giving four speeds forward and four reverse up to 28 mph. To secure more information check No. 5058 on the coupon and drop it in the mail.

No. 6224—Tomato Product

Science Products Co. is now manufacturing its product, Blossom-Set, in aerosol bomb packing. It will continue to be available in bottles, company officials said. The product, according to a company announcement, is a tomato hormone which "makes tomato flowers set fruit even when cold nights or hot, dry weather prevails." The aerosol can is a 12-oz. size which contains a season's sup-

ply for about 100 tomato plants. Jobbers, wholesalers and dealers may check No. 6224 on the coupon, clip and mail it to this newspaper to obtain complete information about wholesale and retail prices and merchandising information.

No. 6223—Vermiculite

Over 40 industrial applications of vermiculite are listed in the 1953 revision of a data book on the mineral's chemical and physical properties announced by the Zonolite Co. The book has been brought up to date to familiarize researchers with latest research findings and practical uses of vermiculite. A selected bibliography is included for the first time along with a list of vermiculite publications. Copies of the 16-page data book are available by checking No. 6223 on the coupon and dropping it in the mail.

No. 5124—Seed Treating Film

Panogen, Inc., has available a film on seed treating for showing by dealers or agricultural workers to farm groups. The film is entitled "Red Seed." To secure more information about the film check No. 5124 on the coupon and drop it in the mail.

Also Available

The following items have appeared in the What's New section of recent issues of CropLife. They are reprinted here to help keep retail dealers on rotational circulation informed of new industry products, literature and services.

No. 6227—Weed Killer

The Pacific Coast Borax Co. has introduced UREABOR, a new weed and grass killer developed specifically for industry. The product, a complex of sodium borates and 3-p-chlorophenyl 1-1, dimethylurea, has been extensively tested throughout the U.S., a company announcement says. No mixing or spraying equipment is required; it is applied dry just as it comes from 50 lb. multi-wall paper sacks. The product will be marketed by the company's Agricultural Sales Division. To secure more complete details check No. 6227 on the coupon and mail it.

No. 6225—Bag Product

Arkell & Smiths is introducing a new moisture-barrier sheet, Lamo-Pak, to industries whose packaged products are affected negatively by changes in moisture content. The laminate is sandwiched between two sheets of light weight kraft and is particularly adaptable for packaging products whose moisture content must be retained and for hygroscopic materials, company spokesmen said. Other features claimed are: no odor, less stiffness, and will not cause sewing needles to gum. Samples of the new Lamo-Pak moisture-barrier sheet may be obtained by checking No. 6225 on the coupon and mailing it.

No. 6226—Seed Protectant

A new insecticide-fungicide seed protectant has been developed by the Du Pont Company. Its trade name is "Delsan" AD seed protectant and contains "Arasan" seed disinfectant and dieldrin insecticide. The trademark, "Delsan," identifies the product as a Du Pont insecticide-fungicide combination, while the letters AD identify the specific formulation. The active ingredient in "Arasan" is thiram. The new material is recom-

Send me information on the items marked:

- | | |
|--|---|
| <input type="checkbox"/> No. 5058—Tractor Shovel | <input type="checkbox"/> No. 6222—Sales Program |
| <input type="checkbox"/> No. 5099—Bag Machine | <input type="checkbox"/> No. 6223—Vermiculite |
| <input type="checkbox"/> No. 5108—Lease Plan | <input type="checkbox"/> No. 6224—Tomato Product |
| <input type="checkbox"/> No. 5111—Bait Dispenser | <input type="checkbox"/> No. 6225—Bag Product |
| <input type="checkbox"/> No. 5119—Slurry Adapter | <input type="checkbox"/> No. 6226—Seed Protectant |
| <input type="checkbox"/> No. 5124—Film | <input type="checkbox"/> No. 6227—Weed Killer |
| <input type="checkbox"/> No. 6207—Film | <input type="checkbox"/> No. 6228—Bag Machine |
| <input type="checkbox"/> No. 6210—Tank Trailer | <input type="checkbox"/> No. 6229—Fly Killer |
| <input type="checkbox"/> No. 6230—Weevil Folder | |

NAME

COMPANY

ADDRESS

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS
PERMIT No. 2
(Sec. 349,
P. L. & R.)
MINNEAPOLIS,
MINN.

BUSINESS REPLY ENVELOPE

No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Croplife

P. O. Box 67,

Reader Service Dept.

Minneapolis 1, Minn.

Better Selling

Richer Sales Fields for Dealers

recommended for treatment of beans, including limas; seed corn (field and sweet); and pea seed. The seed protectant may be applied as a slurry with a standard slurry treater, or the slurry may be mixed with the seed in a barrel treater or on a floor. The material adheres to the seed after treatment and does not tend to "dust off," it is claimed. The material is applied at the rate of 1 1/4 oz. per bushel of field corn seed, and 1 1/2 oz. per bushel of sweet corn, bean, or pea seed. To secure more information check No. 6226 on the coupon and mail it.

No. 6230—Alfalfa Weevil Folder

A new, colorful 6-page folder on the control of alfalfa weevils with Heptachlor is being made available by the Velsicol Corp. A company announcement states that, "This handy, pocket size folder is crammed with information on how to stop alfalfa weevil infestations before they start; how to get better crops; and how to protect helpful parasites." Specific suggestions as to methods and rates of Heptachlor formulations are listed in brief steps. The booklet on alfalfa weevils and other crop insects will be sent without charge. Merely check No. 6230 on the coupon and mail it to this newspaper.

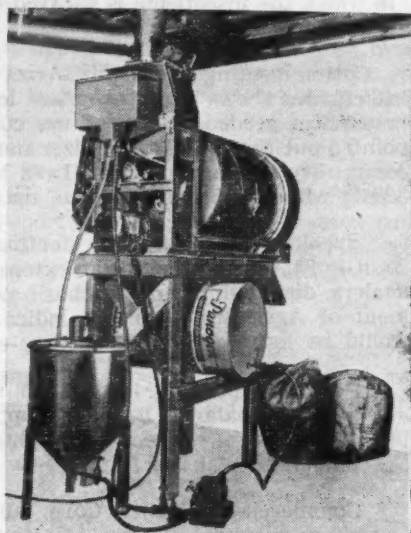
No. 6228—Bag Filling Machine

The Kraft Bag Corp. is now marketing an automatic open mouth filling machine that is said to combine high speed and accuracy in operation with low cost of installation and maintenance. The machine is capable of 22 to 24 one hundred pound charges a minute, with one man hanging bags, using standard size and standard type open mouth bags. The company states that "Because it is pace-setting, the machine requires no head of material to maintain accuracy. It functions like other machines of this type, except that exclusive controls help to maintain unusual

which channel it into processing units where the important chemical components are extracted. Prints of this 23-min. motion picture are available to service clubs, churches, civic, fraternal and other associations. It can be booked on a free loan basis by writing to the Motion Picture and Visual Aids Section, Advertising Division, United States Steel Corp., 525 William Penn Place, Pittsburgh 30, Pa.

No. 5119—Slurry Adapter

Panogen, Inc., now is marketing a slurry adapter for use on its present seed treaters. The addition of the slurry adapter presents a quick method of change-over from liquid seed treating to slurry treating and takes in a greater range of seed treating, it is claimed. A completely automatic unit, it incorporates an overflow feature for uniform suspension of the chemical in the slurry mixture. The company announcement states: "This feature, along with an accurate measuring device, delivers the slurry, properly mixed at the exact dosage rate, to the seed—insuring most effective seed treating. The slurry tank pumps dry to avoid waste. The treat-



er is self-cleaning, permitting quick change-over to liquid seed treating." To secure more complete information check No. 5119 on the coupon and drop it in the mail.

No. 6229—Fly Killer

A new fly bait that is said to kill up to two million flies per pound is now being marketed nationally by the Pittsburgh Coke & Chemical Co. The new product, called Dipterex-199, is claimed to kill both resistant and non-resistant flies in seconds and provide up to 98% kills within a few hours after a single application. The product is packaged as a dry bait and sold in 1-lb. shaker-type containers and also in 10-lb. pails. It is said to have no odor, won't stain and is free-flowing granular material. One or two applications per week is recommended for full control around the farm and in commercial establishments. The product's active ingredient is Bayer compound L-13/59. The firm reports that at a mid-western university a small amount of Dipterex-199 was placed in a test chamber about the size of a large living room. Two thousand flies were released in the chamber. One hour later, 94% of the flies were dead, and at the end of eight hours, a 100% kill was recorded, according to the company. Another group of researchers tested the product at a large southwestern farm. Dipterex-199 was applied to surfaces in feed mixing and storage rooms and on feed troughs and pens. The official report of the research team contained the following statement: "The speed and completeness of fly control were sensational." Flies feeding on the bait lost their ability to fly in 60 to 140

seconds. They accumulated in piles up to one-half inch deep in 48 hours. One month after application, flies were still being killed by the original treatment, the firm reports. Dealers are being backed by the most extensive advertising and merchandising



program ever initiated by the company for a single product. Large advertisements will be featured in national dairy and poultry magazines and a concentrated schedule of announcements will be carried on farm programs on over a dozen major clear channel radio stations. Television spots will be used in selected areas. At the dealer level, Dipterex-199 will be promoted by silver, red and blue display cartons, and by wall posters, window streamers and direct mail pieces. For more details check No. 6229 on the coupon and drop it in the mail.

No. 6222—Sales Program

The Agricultural Sales Division, Chas. Pfizer & Co., Inc., has available a dealer program for promoting sales of its product, Agri-mycin, an antibiotic spray powder for control of certain plant diseases such as fire blight of apples and pears. The program is outlined in new literature prepared recently and which is now available. A broadside details the program to the dealer and a catalog sheet outlines the product and various program angles, also at the dealer level. Also available is a small folder for consumer distribution and a large booklet which contains abstracts on the use of antibiotics in the treatment of plant diseases. To secure more full details of the program check No. 6222 on the coupon and mail it.

No. 6210—Tank Trailer

Descriptive literature on its anhydrous ammonia tank trailer has been made available by the Foreman Manufacturing Co. Tank specifications listed on the literature state: 1,000-gal., 265 PSIG 300" F. maximum tanks—either 41 in. or 46 in. diameter tanks. According to a company spokesman, the tank trailer is designed to insure compliance with applicable ICC regulations, with a tank mounting which facilitates tank removal. The literature lists specifications of the trailer chassis, axle assembly, tires, brake system, coupling, fenders, safety chains, lighting and dimensions. Secure more complete information by checking No. 6210 on the coupon and mailing it.

Packaged to SELL!

Riverdale LINDANE

Twelve attractively lithographed one-pound tins with handy measuring cups, shipped in a convenient display carton.

Here is a chance to sell one of the best known insecticides to a new and larger market. Truck farmers, gardeners, nurseries, live stock raisers, etc.—all need Riverdale Lindane. It is ideal for seed treatment, crop insect control, fly control and livestock parasite control.

Get in on this chance to increase your insecticide business.



**Riverdale
CHEMICAL CO.**

324 E. 147th Street - Harvey, Illinois

A Complete Line of
Weed Killers and Insecticides

Riverdale LINDANE

"The insecticide
that is good
ALL summer."

RIVERDALE CHEMICAL CO., Harvey, Ill.

Please send me complete information and price structure on Riverdale Lindane.

Name _____
Company _____
Address _____
City _____ State _____



COTTON LAND—Under irrigation, this West Texas land produces fat cotton crops. The above scene, in the Canyonosa community, Pecos County, shows how siphon tubes are used to get water out of the ditch and onto the row. Water, plus scientific farming methods, means two bale an acre yields here.

Water, Scientific Farming Make Wasteland Bloom

Finding irrigation water in the Southwest is something like an Easter egg hunt after nine tenths of the eggs have been found. Finding the few remaining ones requires slow and careful searching.

One West Texas area overlooked in the first mad search for underground water is the Canyonosa area in the former wastelands of Pecos County, Texas.

Carved out of barren rangeland only about two years ago, it now has an estimated 7,000 acres of cotton under irrigation. This new community, which is as level as the surface of a dry lake, is blessed with deep soil and abundance of underground water. The cotton yield averages two bales per acre.

Cotton is not the only profitable crop at Canyonosa, however. Vegetables did well except for a damaging hailstorm, and feed crops showed a good profit.

Perhaps the most amazing crop of all was a new shatterproof sesame which was grown on the Emert Weatherby farm. On 32 acres Weatherby produced around 1,000 lb. per acre, which is selling at close to \$1 lb.

In producing such bumper crops the farmers of the area say that the "old-hit-or-miss" farming that Dad and Grandad followed is out of the picture. It requires scientific farming nowadays, with a heavy outlay of cash for good seed, plenty of water, fertilizers and insecticides. They claim it is better to spend one bale in order to make two than it is to spend only half as much and make a bale per acre.

COLUMBIA BASIN

(Continued from page 9)

not yet come into production and there was only one old orchard of consequence that now uses project water, the report said.

The Columbia Basin project which covers an area of 2,500,000 acres in central Washington is to have 600,000 acres under irrigation by 1960. This will mean about 8,000 new farms. The first area, known as block 1, came under irrigation near Pasco in 1948 using water pumped from the Columbia River near the block.

Main project water is pumped from the river at Grand Coulee dam at the north end of the project and distributed southward for 80 miles principally by gravity flow.

Firms Conducting Educational Campaign On Handling Pesticides

SACRAMENTO — Allen B. Lemmon, chief of the Bureau of Chemistry, California Department of Agriculture, reports that some of the major pesticide firms are beginning an educational campaign to correct some of the careless mishandling of these chemicals.

Mr. Lemmon said placards distributed to dealers and notices enclosed in packages of pesticides caution the user to read and practice these general rules:

1. Use strictly in accordance with label cautions, warnings and directions.
2. Keep all materials away from children, irresponsible persons and domestic animals.
3. Always keep chemicals in their original properly labeled containers. Never pour a poison into a wine jug, can or container other than the original.
4. Dispose of empty container safely. Burn empty bags promptly and stay out of smoke. For non-returnable liquid containers, immediately wash inside and outside thoroughly and render useless by puncturing, then bury if possible. For returnable containers, seal tightly and wash outside thoroughly immediately after use.

W. Fred Cherry Heads Colorado Agricultural Chemicals Assn.

DENVER—W. Fred Cherry, Rohm & Haas Co., has been named president of the Colorado Agricultural Chemicals Assn. Other officers named at the annual meeting are Ralph Farr, the Farr Co., Greeley, Col., vice president, and Orvall Schall, Schall Agricultural Chemicals, Monte Vista, Col., secretary-treasurer.

New directors elected for two-year terms are E. C. Stone, E. C. Stone Co., and Robert Bowman, General Chemical Co.

At the meeting it was stated that the association attributes much of its success to the cooperation that exists between industry and Colorado A&M College personnel, "whose one goal is offering uniform products and uniform recommendations to the producer."

Fertilizer Passes Test By West Texas Farmer

DIMMITT, TEXAS—Most farmers in West Texas know that fertilizer pays, but few have ever run comparison tests on their fields. Last year John Arledge did this and achieved some interesting results.

On the same kind of soil, he divided his cotton land into two 30 acre fields. He farmed the two identically alike and applied the same amount of water to each. On one, however, he put down 150 lb. 16-20-0 and left the other untreated. The fertilized field produced 43 bales of cotton, while the other 30 acres yielded only 33 bales. This year all his cotton will be fertilized.

Quote

"There is no substitute for a good job of farming—and able management. Efficiency on farms is becoming mandatory. Some farmers may be tempted to economize by using less fertilizer. It will be a mistake."—True D. Morse, undersecretary of agriculture.

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on rotational circulation up to date on industry happenings.

A U.S. Department of Commerce report stated that the fertilizer industry was in its best position in history to supply demand for plant food material this year. . . . Dr. Harold Gunderson, Iowa State College, became president of the North Central Branch of the Entomological Society of America at the group's annual meeting in East Lansing, Mich.

Corn borer damage in 1954 amounted to about 192 million bushels, worth more than \$261 million, according to the U. S. Department of Agriculture.

Farmer planting intentions, as of March 1, indicated a 285½ million acreage in 16 crops this year—an increase of 3.2 million acres over 1954—according to the U.S. Department of Agriculture. Major increases were in feed grain crops.

The first annual meeting of the National Nitrogen Solutions Dealers Assn. was held in Omaha March 14-15. Wayne Johnson, Shenandoah, Iowa, was named president. . . . Phillips Chemical Co. acquired quarter interest in Farmers Corporation, a new firm established March 12 by the National Farmers Union and Kee-McGee Oil Industries.

Chas. Pfizer & Co. announced large-scale commercial production of itaconic acid on March 15. The material may have an application as base for insecticidal products, as a "building block" in the process. . . . Mackwin Co., Winona, Minn., developed a method of mixing pesticides with fertilizers in which the insecticide is sprayed onto fertilizer as the latter passes along a conveyor belt.

Cotton meeting at Phoenix, Ariz., March 8-9 brought out fact that systematic insecticides show "great promise" in pest control in cotton, but much more research is needed before full use comes. . . . U.S. Department of Agriculture pointed out that cost of fertilizer materials has increased less than any other commodity the farmer buys. Hired labor was listed as having increased over 300%, while fertilizer has gone up only 52%, compared to cost of 1935-39.

Speakers at the Spring Meeting of the National Agricultural Chemicals Assn. in St. Louis called for an extensive educational job, directed at the public dealers, distributors and the basic pesticide industry itself. . . . U.S. Department of Agriculture surveys indicated that chinch bug infestation in 1954 would be local, ranging from non-economic to threatening.

Pesticide industry leaders, in answer to a Croplife survey, said that an improved balance between supply and demand of materials appears likely for 1955. . . . Freeport Sulphur Co. and Pittsburgh Consolidation Co. announced plans to form a new firm, National Potash Co.

Commercial Solvents Corp. announced that it will participate in Canadian chemical project, Northwest Nitro-Chemicals, Ltd., which will manufacture and market nitrogen and phosphate fertilizers. . . . Standard Oil Company of California announced a chemical manufacturing expansion expected to cost \$16 million. It will include a new ammonia and nitric acid plant.

A new firm, Diamond Black Leaf Co., was announced Feb. 24. Diamond Alkali Co., Cleveland, will acquire Virginia-Carolina Chemical Company interest in the new firm during the next five years, according to the agreement. The new firm will be managed by Diamond Alkali. Loren P. Scoville and Dr. Bruce G. Gleissner will serve as general manager and assistant general manager, respectively, in the new firm.

A new attendance record of over 500 was noted at the Feb. 17-18 meeting of the Middle West Soil Improvement Committee in Chicago. Speakers represented colleges and universities in the 13 states involved, and included industry representatives.

The U.S. Commerce Department predicted record sales of chemical and allied products in 1955, with gains seen in the use of fertilizers and pesticides.

Construction started on an ammonium nitrate plant to be operated by Brea Chemicals, Inc., Los Angeles. . . . International Minerals & Chemical Corp. announced that it is expanding its potassium sulfate producing facilities at Carlsbad, N.M. . . . Stauffer Chemical Co. completed a new insecticide and fungicide blending plant at Lubbock, Texas.

Procedural regulations for the establishment of safe tolerances for pesticides chemicals used on food crops are to go into effect March 6, the U.S. Department of Health, Education and Welfare announced Feb. 9.

Robert Campbell, acting president of the new St. Paul Ammonia Products Co., announced that the firm would erect a \$15 million anhydrous ammonia plant near St. Paul.

Fertilizer mixers, replying to a Croplife survey on the 1955 business outlook, said a balance of supply and demand appears likely this year. The fertilizer program was reported to be making headway in some areas.

The 1955 corn allotment was set at 49,842,697 acres, an increase of 8% over that of last year. . . . Organization of Calumet Nitrogen Products Co., a new firm that will build an ammonia plant at Hammond, Ind., was announced by Standard Oil Co. (Indiana) and Sinclair Refining Co.

Sales of East German potash below domestic prices threaten to produce a loss of at least \$25 million to the U.S. potash industry, it was stated at a U.S. Tariff Commission hearing on the imports. . . . The U.S. Department of Agriculture reported that a serious corn borer infestation is likely this year in the Midwest if weather conditions are favorable for the insect development.



Don't confuse grains with the warns J. N. R. biologist for the Even with the farmers in A both alfalfa and barley—in grow clover apply alfalfa. The co-pose attacks This insect m each or cow-

Dr. Logan Soil Science I ornia State F Luis Obispo, results on a r istration as weight gained The demon- ward on the c Obispo, and containing 55 in the amount in one of the was not fertil Forty young teers (average placed on the acres per an teers on the acres per ani

By the fir the end of t average gain on the ferti on the unfer

Allowing fo or the anim this still sho On the basis b, the added grazing on th per acre, les application co the meat ad unfertilized fi per acre. Use of fer resulted in a \$7.47 in one

Cattle get rangeland v killed three pig sagebrush of experimen the Wyoming ment Station

With three brush killed 100 to 200 use the imp elently since it to untreat

They star more heavily als are appl creased grass 80% or more trolled.

Dale Bohm reported the still continuir station, the Assn. and th Research sprays of var 4.5-T in 195 an cattle ar total of 350 half-acre plot Production range of 480 untreated sa of 1,335 lb. more of the s

ews re-
eeks, is
ers on
ate on

r industr
material
resident o
ica at the

million
depart-

million acre
-according
feed grain

alers Assn
Iowa, wa
interest in
onal Farm

uction of
as base
Mackwin
fertilizers
ses along

t system
much more
gricultur
any other
eased over
of 1935-39

Chemical
the public
S. Depart
on in 195

said that
appears
ation Co

ate in
which wi
Standar
expansion
and nitri

17-18
chicago
es in-

chemical
lizers an

e operate
Chemical
ducing fa
a new in

for pest
the U.S.
a Product
ammonia

business ou
r. The fa
areas.

crease
trogen
Ham-
inclair

to produc
stated
departmen
likely th
the insect



FARM SERVICE DATA

Extension Station Reports

Don't confuse plant lice on small grains with the yellow clover aphid, warns J. N. Roney, extension entomologist for the University of Arizona. Even with the practice that many farmers in Arizona use of growing both alfalfa and small grains—such as barley—in the same field, the yellow clover aphid attacks only the alfalfa. The common aphid or plant louse attacks only the small grain. This insect may be either the green-peach or cow-pea aphid.

★

Dr. Logan S. Carter, head of the Soil Science Department of the California State Polytechnic College, San Luis Obispo, Cal., has reported on results on a range fertilization demonstration as measured by animal weight gained per acre.

The demonstration is going forward on the college farm at San Luis Obispo, and covers two fields, each containing 55 acres. 16-20-0 was used in the amount of 300 lb. per acre in one of the fields while the other was not fertilized.

Forty young Hereford range grade steers (average weight 532 lb.) were placed on the fertilized field (1.37 acres per animal) and 27 550 lb. steers on the unfertilized field (2.03 acres per animal).

By the first week in June, 1954, the end of the grazing season, the average gain per acre was 206.9 lb. on the fertilized field and 95.7 lb. on the unfertilized field.

Allowing for 47 more grazing days for the animals on the former plot, this still shows an excellent profit. On the basis of a selling price of 22¢ lb., the added weight gained during grazing on the first plot was \$45.52 per acre, less \$17 for fertilizer and application cost, or \$28.52 net, while the meat added by grazing on the unfertilized field had a value of \$21.05 per acre.

Use of fertilizer in this case resulted in a net profit per acre of \$7.47 in one short grazing period.

★

Cattle get more good grazing from rangeland where chemicals have killed three fourths or more of the big sagebrush, according to a report of experiments in 1950-52-53 from the Wyoming Agricultural Experiment Station.

With three fourths of the sagebrush killed, the range grows from 100 to 200% more forage. Stock use the improved range more efficiently since they seem to prefer it to untreated land.

They start using sprayed areas more heavily the same year chemicals are applied. Efficient use of increased grasses is raised 20% when 90% or more of the sagebrush is controlled.

Dale Bohmont, station agronomist, reported the research. The trials, still continuing, are sponsored by the station, the Big Horn Permittees Assn. and the U.S. Forest Service.

Research workers used aerial sprays of various rates of 2,4-D and 2,4,5-T in 1950-52-53 on big sagebrush on cattle and sheep rangeland. A total of 350 acres was sprayed in 7 half-acre plots.

Production increased from an average of 480 lb. grass per acre on untreated sagebrush land to a high of 1,335 lb. per acre where 90% or more of the sagebrush was controlled.

W. W. Mitchell, Sacramento County, Cal., farm adviser, reports that weeds in oat, wheat and barley fields may be controlled by the use of the amine form of 2,4-D at the rate of three fourths of a pound per acre.

Mr. Mitchell says the spray should be used only after the crop is well established, tillered and at least six inches tall. Air applications are made at the rate of 10 gal. per acre and ground applications at 20 to 50 gal. per acre. A weed spray nozzle should be used with 30 to 60 lb. of pressure per square inch, according to Mr. Mitchell.

★

Oregon farmers now have two new weapons to use against the carrot rust fly whose larvae eat into carrots and pose a serious threat to commercial plantings and home gardens. H. E. Morrison, Oregon State College entomologist, says dieldrin or heptachlor insecticides mixed into the soil before planting time may now be used as well as the older recommended materials, aldrin or chlordane.

The OSC departments of agricultural chemistry and food technology report carrots grown in treated soil will not contain undesirable residues or have off-flavor as a result of the treatment.

★

For full productivity on California range land, fertilizer is needed because of the heavy rains during the winter time.

This is the recommendation of Jack Major, botanist at the Hopland Field Station of the University of California in Mendocino County. In some areas, says Mr. Major, two thirds of winter the rain passes through the soil, carrying off valuable plant food.

At the station, devoted to the study of range problems of the north coast area in California, the average annual rainfall is about 38 in. Of this, approximately 24 in. would pass through the soil or run off, according to Mr. Major. Only 6 in. can be evaporated or used by plants during the five cool months. Eight inches—all the water the soil will hold plus what falls during the period of green plant growth—is used by plants in the spring.

Comparable soil leaching occurs in North Carolina, says Mr. Major. In the eastern state the annual rainfall is even greater—56 in., or 18 in. more than at Hopland.

The research botanist recommends that pasture managers in the humid sections of the eastern U.S. include fertilizer applications in their operations. Even though California is primarily an arid region, ranchers need to supply nutrients to their ranges in the fall and winter for highest meat gains, Mr. Major suggests.

★

Colorado alfalfa hay yields are estimated at slightly more than two tons per acre. However, many farmers are getting yields of five to eight tons per acre through the use of adequate fertilization and irrigation, according to Rodney Tucker, extension agronomist at Colorado A&M College.

With the exception of water, phosphate probably is the most important factor limiting alfalfa hay yields, he says.

Demonstrations in 19 Colorado

counties have shown that alfalfa yields can be stepped up by one ton per acre each year for the rotation period by having adequate amounts of phosphate available. According to the agronomist, about 45 lb. phosphoric acid is needed to produce a four-ton yield of alfalfa. This is the amount contained in 100 lb. triple superphosphate.

The agronomist recommends 100 lb. or more of phosphoric acid per acre for all alfalfa planted in 1955.

★

The European red mite on pear trees can be held in check by pre-bloom sprays, according to experiments which have been performed by Harold F. Madsen, assistant ento-

Better Selling

Richer Sales Fields for Dealers

mologist on the University of California campus at Berkeley, and his associates.

Results of these tests have shown, Mr. Madsen says, that pre-bloom treatment with the proper acaricide will keep the European red mite under control until the summer period. At that time other acaricides can be used without fear of injury to foliage or fruit.

**When You Think of
CHEMICALS
Think of
THOMPSON-HAYWARD**

KANSAS CITY 8, MO.

LOOK for the ANCHOR on your TREBLE Superphosphate



ANCHOR BRAND TREBLE SUPERPHOSPHATE

Free Flowing • Dust Free • Pelletized
—Guaranteed 46% • Available
Phosphoric Acid • High Water Solubility

Call Your Local Supplier Today
Manufactured by

Western Phosphates, Inc.
Garfield, Utah

Distributed by

**WILSON & GEO. MEYER & CO.
INTERMOUNTAIN**

Salt Lake City • Phoenix • Los Angeles
Fresno • San Francisco • Portland • Seattle

ALL BOOKINGS SUBJECT TO FINAL CONFIRMATION

Available Now!

Reprints of Croplife's Feature

Bug of the Week

Twenty four of the insects described in Croplife's weekly feature, "Bug of the Week," have been reprinted into an attractive 8½ x 11 inch booklet for distribution to the trade. The price is 25c each in quantities up to 100; 20c each in quantities of 100-1,000, and 15c each in quantities over 1,000. Firms may have their names imprinted on the back cover at a moderate extra charge.

Included in the booklet are the following insects:

Alfalfa Weevil	Northern Corn Rootworm
Armyworm	Onion Thrip
Boll Weevil	Plum Curculio
Chinch Bug	Potato Leafhopper
Cotton Bollworm	Seed Corn Maggot
Cutworm	Sweetclover Weevil
Grasshopper	Tarnished Plant Bug
Imported Fire Ant	Tobacco Hornworm
Lawn Chinch Bug	Tomato Hornworm
Lygus Bug	Tuber Flea Beetle
Meadow Spittlebug	White Grub
Mosquito	Wireworm

Order From Reprint Department

Croplife

P.O. Box 67

Minneapolis 1, Minnesota

Better Selling

Richer Sales Fields for Dealers

Heavy Applications Of Nitrogen Produce High-Protein Hay

GUNNISON, COLO.—The use of heavy nitrogen application to increase the protein content of hay shows promise in tests by Colorado A&M and U.S. Department of Agriculture scientists.

Last spring the scientists put 400 lb. per acre of nitrogen on a meadow on the Ed Blackstock ranch near Gunnison, Colo., for the first field-scale trial at growing "super hay."

By the end of the summer they had harvested over three tons of super hay, and protein content of the hay was extremely high. The first cutting contained 20.5% crude protein—twice the usual amount found in hay grown on the meadows. In the second cutting, crude protein was 15.6%.

For the past 84 days scientists have been feeding the super hay to overwintering breeding cattle. They're using the first cutting to supplement Gunnison County meadow hay in feeding trials at the Gunnison County feeding research plant. The second cutting is supplementing South Park hay in trials on the J. T. McDowell, Jr., ranch southeast of Fairplay.

Here are the results after 12 weeks of feeding. Two pounds per day of the first cutting, 20.5% protein super hay has produced daily gains amounting to about ¼ lb. Heifers being fed this hay are making just as good gains as those fed 1 lb. 41% protein cake supplement per day.

The 15.6% protein second cutting hay that is being fed as supplement in South Park at the rate of 2.6 lb. per head per day is also equaling 1 lb. 41% cake.

Scientists working with the super hay say it shows promise of being capable of replacing 1 lb. of 41% cottonseed cake as supplement.

Here's the way the costs work out on the Gunnison-grown hay. The 400 lb. nitrogen can be applied for \$54 to \$60 per acre. The application will produce an additional 770-plus lb. crude protein per acre over unfertilized hay. This extra crude protein is worth around \$90 to \$104 when compared to 40% commercial pelleted supplements. So the increased production of crude protein is worth at least \$35 per acre.

How much protein cake can be substituted for hay with no ill effects on cattle? Looking ahead to times when meadow hay might be in short supply and expensive, scientists are seeking the answer to this question along with their tests of super hay.

For the past six weeks overwintering heifers in the Gunnison tests have received 4 lb. 41% protein cake and not more than 4 lb. hay. This is about four times the amount of this type of supplement an overwintering calf would normally receive. The calves have made more than 8/10 lb. gain per day on the ration.

Idaho Farmers Ready

MOSCOW, IDAHO—Idaho farmers will be on their mark and ready for a fast start when the first good farming days of the 1955 season arrive. That is the report from county agents all over the state as winter drags out its last cold in what is termed one of the most backward spring seasons in the history of Idaho farming.

Agents say the season's shortcomings will make a few changes in the cropping plans already laid out by most farmers.



COLORADO CONVENTION—Personalities who played leading roles in the Colorado Grain, Milling & Feed Dealers Assn. convention held at Denver recently are shown above. At the left is Dr. L. J. Padgett of the U.S. Department of Agriculture pest control branch, Oakland, Cal., displaying a sample of grain gutted by Khapra beetle infestation to the audience. In the center picture, Wayne

Fagerlund (left) manager of the Snell Grain Co., Flagler, Colo., is receiving the door prize, a repeating shotgun from J. K. Malo, Intermountain Elevator Co., Denver, outgoing president of the Colorado association. Walter C. Berger (right), associate administrator of the Commodity Stabilization, Washington, was principal speaker at the president's luncheon.

Nitrogen Boosts Bermuda Yields in New Mexico Tests

STATE COLLEGE, N.M.—Preliminary studies by the New Mexico Experiment Station in the southern part of the state show that the yield of Coastal Bermudagrass can be increased from less than a ton or more than 5 tons per acre by adding enough nitrogen.

On the various plots under test, all received 75 lb. P₂O₅ but different amounts of nitrogen were applied to each, except one on which no nitrogen was applied.

The yield of the no-nitrogen plot was .89 and .98 ton of air-dry hay in 1953 and 1954, respectively; 100 lb. nitrogen resulted in yields of 2.64 and 2.09 tons; 200 lb. raised the yields to 3.18 for each year; 300 lb. increased the yields to 4.53 and 3.42; and 400 lb. nitrogen returned yields of 5.80 and 4.85 tons.

The experiments were made on very sandy soil with low water-holding capacity. On a more fertile soil with a high water-holding capacity, the forage yields would undoubtedly be higher, say New Mexico A&M College experts.

New Nebraska Firm

HASTINGS, NEB.—Articles of incorporation have been filed by Green-N82, Inc., a firm in Hastings dealing in the sale and storage of anhydrous ammonia and other chemical fertilizers. Authorized capitalization is \$26,250, with Jack Halloran and Calvin J. Christensen listed as incorporators.

Future of Corn in California Outlined

SAN FRANCISCO—Seed dealers and county farm advisers of Central California recently heard Russell N. Rasmussen, vice president in charge of sales for DeKalb Agricultural Assn., DeKalb, Ill., explain the great future for hybrid field corn raising in their state at the annual spring conference meetings conducted by C. M. Volkman Seed Co.

Mr. Rasmussen explained that DeKalb varieties for California have been field tested for the past ten years. This work has been carried on with the cooperation of county farm advisers on California farms.

It was further pointed out that it would take the production of 300,000 acres of corn for grain purposes to supply the present need, without having to import corn from the middle west. In 1954 there were 160,000 acres of corn, both for silage and grain corn, grown in California. At the present, California livestock and poultry industries are still importing about 50% of their needs from the corn belt.

Weed Essay

WINNIPEG — The North Central Weed Control Conference is again sponsoring a weed essay scholarship open to boys and girls between the ages of 12 and 18 residing in any of the fourteen states or three Canadian provinces making up the conference district. The subject, to be dealt with in not more than 1,000 words, is: "How we control weeds on our farm." The best essay will win a \$300 scholarship.

Grasshoppers Expected to Infest Nearly Million Acres of Colorado Range Land

FORT COLLINS, COLO.—Nearly a million acres of Colorado range land will be infested with grasshoppers in 1955, estimates Gordon Mickel, extension entomologist at Colorado A&M College.

The infestations are centered in three areas: 270,000 acres in Logan, Kit Carson, Washington, Phillips, Sedgwick and Yuma Counties; 540,000 acres in Las Animas, Pueblo, Fremont, Huerfano and El Paso Counties; and 140,000 acres in Montezuma, Dolores and La Plata Counties.

This total does not include 203,000 acres of cropland in these areas which are infested with hoppers.

A cooperative program was set up in 1954, with state and federal governments assisting ranchers in applying control measures over large areas of range land. Cost of control was split equally between the federal government, the state of Colorado and participating ranchers.

State aid in 1955 will depend on renewal of a state appropriation. Unexpended state funds appropriated in 1954 reverted back to the state treasury on Dec. 31, 1954.

Ranchers who want state and federal help in 1955 must organize pest control districts in their counties. On cropland, however, farmers must make their own individual arrangements for control.



I believe we've heard something about farm surpluses. Maybe dealers and county agents are responsible for surpluses as well as the farmers.

Let's play "Supposing." Just suppose we had no surplus. What would happen to the Seventh Fleet and to all the wonderful lads stationed in Alaska and around the world?

I doubt if we should feel badly about it. On the other hand, I think we should feel pretty good, because we have advised farmers to use correct amounts of plant nutrients. After all, the plant food sold today by dealers is about the best buy considering all angles.

Plant food enables the farmers to produce more on fewer acres, with less labor and with more profit, and when the farmers make profits they make purchases, and the average farmer and his family will buy more than the average town family.

Farmers buy more hardware, fencing, roofing, machinery, seeds, fertilizer, insecticides, rubber tires, gas, oil, electricity, deep freezers, milking machines and about as many clothes. The family in town will purchase more food.

If dealers have helped farmer make a profit, they have likewise helped the other fellows on Main Street to make a profit.

Main Street in agricultural America is as good as the farming at the end of it.

P.S. Do you have much soil in your trade area with that "tired feeling?"

EXTENSION APPOINTMENT

WASHINGTON—P. H. Stone, state supervisor of Negro agricultural extension work in Georgia, has been named by Clarence M. Ferguson, extension administrator, to succeed the late John W. Mitchell as a member of the Federal Extension Service staff. The veteran agricultural leader will assume his duties in Washington about April 15.

SHEA

(Continued)

carried out by steering staff work beginning construction of the key to the program, Mr. Shea. Additional for phosphorus it is able us to build and construct phosphate plant.

Combined on faces will be mental phosphorus. Energy operation will phase of an TVA, pr

Also set for Columbia vicin washing and rock for the phosphate during the past and utilized by

The company that the independent operation the mining ending with fish chemical and the ability flexibility in and guard a in deliveries Mr. Shea ex

At Dallas, phosphoric phosphate plant. lled by tank plant and pho local indu in the produ hates.

The facility will permit organic chemical us and the elalty production have l company al past two ye

The Shea organized in the industrial production of phosphate phosphorus additional ca one of the mental phosph products.

Ashcraft Named For Florida

ATLANTA Co. has been tributor for Escambia Ba ola, Fla. P hydrous am rate, nitric and other by and agricult George W. man of Ash

Construct ready and ground-brea been tentati was announ President of cal.

Southern South Caroli ew plant Georgia and

CONSE

FARGO — Farmers and eta have s on plans on

SHEA CHEMICAL

(Continued from page 1)

carried out by the company's engineering staff, with preliminary work beginning this summer. Construction of the phosphorus furnace is the key to the expansion program, Mr. Shea indicates. "The additional forty million pounds of phosphorus it will produce will enable us to expand present facilities and construct the new sodium phosphate plant in Dallas," he said.

Combined output of the two furnaces will be about 40,000 tons elemental phosphorus a year, Mr. Shea said. Energy for the electric furnace operation will be supplied by purchase of an additional 33,000 kwh from TVA, present power supplier.

Also set for construction in the Columbia vicinity will be a plant for washing and preparing phosphate rock for the furnace operation. Thus, the phosphate rock deposits acquired during the past year will be developed and utilized by the firm.

The company official pointed out that the firm now has an independent operation, beginning with the mining of phosphate rock and ending with the production of finished chemicals. "Our own reserves and the ability to use them give us flexibility in raw material supply and guard against any interruption in deliveries of the raw material," Mr. Shea explained.

At Dallas, the firm will construct phosphoric acid and sodium phosphate plant. Phosphorus will be supplied by tank cars from the Tennessee plant and phosphoric acid will be sold to local industrial users and utilized in the production of sodium phosphates.

The facilities at Adams, Mass., will permit the production of organic chemicals based on phosphorus and the making of other specialty products. Pilot plant operations have been carried on by the company along these lines for the past two years.

The Shea Chemical Corp. was organized in 1951. It expanded into the industrial chemical field with the production of food and fertilizer grade phosphoric acids in 1953 and sodium phosphates in 1954. With the additional capacity, the firm becomes one of the largest producers of elemental phosphorus and phosphorus products.

Ashcraft-Wilkinson Named Distributor For Florida Firm

ATLANTA — Ashcraft-Wilkinson Co. has been appointed exclusive distributor for the entire production of Escambia Bay Chemical Corp., Pensacola, Fla. Products will include anhydrous ammonia, ammonium nitrate, nitric acid, nitrogen solutions and other by-products for industrial and agricultural use, according to George W. McCarthy, board chairman of Ashcraft-Wilkinson.

Construction of the plant is already under way and formal ground-breaking ceremonies have been tentatively set for April 15, it was announced by M. A. Abernathy, president of Escambia Bay Chemical.

Southern Mississippi and parts of South Carolina will be served by the new plant in addition to Florida, Georgia and southern Alabama.

CONSERVATION PLANS

FARGO — To date nearly 29,000 farmers and ranchers in North Dakota have soil and water conservation plans on 17,887,070 acres of land.

Spreader Mixer Adapted For Cotton Fertilization

OWATONNA, MINN.—The E. S. Gandrud Co. here has made an adaptation of its three-hopper mixer spreader that bands fertilizer for the cotton grower.

The mixer spreader, which has three hoppers designed for placing the three major fertilizer elements on a field according to any specification desired, was first unveiled at an open house here last July. (See page 20 of the July 26 CROPLIFE.)

After that open house, E. S. Gandrud, president for the firm, had several requests to develop the machine for fertilizer banding operations in cotton growing.

The firm now has produced a model known as the Gandy Mid-L-Wheel which has a span of 80 in. center to center on the wheel and takes three rows with spacing of 38 to 42 in. between cotton rows.

First shipment of the new models went to the Arkansas Farmers Assn.

Government Attempts To Intensify Wind Erosion Control Studies

WASHINGTON — Representatives of the U.S. Department of Agriculture met in Denver, Colo., March 11 with representatives of the Soil Conservation Service and state agricultural stabilization and conservation committees to intensify studies of control measures needed to check wind erosion damage in several southern Great Plains states.

Most recent field reports to the USDA's Soil Conservation Service show that about 4.8 million acres of farm and rangeland had been damaged by wind erosion between Nov. 1, 1954, and March 1, 1955. The affected area includes parts of southwestern Nebraska, southeastern Wyoming, eastern Colorado, western Kansas, western Oklahoma, northwestern Texas, and eastern New Mexico.

Meanwhile, spokesmen said state

and county ACP committees have authority to use conservation funds to help meet cost of erosion control practices. The amount of funds available under the regular ACP program is limited because they are allocated on the basis of normal conservation needs. However, the President has recommended emergency legislation which would make available an emergency fund of about \$7,000,000. Since soil binding crops cannot be grown until there is sufficient moisture, the only practical alternative is emergency tillage with chisels and listers, or other suitable implements, at right angle to prevailing winds, they said.

COTTON TESTS

COLLEGE STATION, TEXAS — Deltapine TPSA, D&PL Fox, Stormproof No. 1, Stoneville 2B and Delfos 9196 were the five high-yielding varieties in the Winter Garden cotton variety tests conducted near Batesville, Texas, last year.

Put your Shipping Sack on your Sales Team



....with attractively designed brands and brilliant multi color printing by HAMMOND



Hammond Multi-Walls



Outstanding in appearance and durability . . . Hammond Multi-Wall bags create enthusiasm and pride among your sales representatives . . . help to increase sales through distributors and dealers . . . build prestige for your company and products, and provide complete protection of contents from packing machines to the ultimate consumer. Yes, you can put your shipping sack on your sales team by specifying Hammond Multi-Walls.

For Multi-Wall Bags,

"Make it a Habit to Depend on Hammond"

HAMMOND BAG

& PAPER COMPANY

General Offices: Wellsburg, W.Va.

Plants in Wellsburg, W.Va.,

Pine Bluff, Ark. and Charlotte, N.C.

Representatives in the following cities: NEW YORK, N. Y., CHICAGO, ILL., MINNEAPOLIS, MINN., KANSAS CITY, MO., CLEVELAND, OHIO, ATLANTA, GA., WASHINGTON, D.C., DALLAS, TEXAS, CHARLOTTE, N. C., LIGONIER, PA., BLUEFIELD, VA.



WORLD REPORT

Industry News from Everywhere

By GEORGE E. SWARBRECK
Croplife Canadian and Overseas Editor

Canada's potential market for herbicides, insecticides and fungicides capable of being served from a location in the province of Manitoba has been valued at \$100 million by a survey organization, Arthur Little, Inc., Cambridge, Mass. The present level of consumption is less than 10% of the potential.

The provincial authority for industry and commerce considers that additional capacity could be used, since the area has a number of natural advantages for manufacturers, including the availability of natural gas, cheap power, and the possibility of using locally produced salt for chlorine manufacture.

Dealing with fertilizers the Little organization found that nearby markets are not sufficiently large to support an economic ammonia operation at the present time, although potential markets in eastern Canada and northern U.S. justify serious consideration being given to the formation of an integrated fertilizer operation producing mixed fertilizers as well as ammonia.

The survey pointed out that pending the availability of natural gas, Manitoba could provide the major requirements for nitrogen production. The minimum economic size for an ammonia plant, using natural gas as a source of hydrogen, is considered to be one producing at least 83 tons nitrogen a day.

Sicilian Sulfur

The crisis recently facing the Sicilian sulfur industry appears to be on the point of settlement as a result of the government's decision to aid the industry in making its sulfur competitive on world markets.

Difficulties became apparent after the end of the Korean war for world prices fell and the producers found themselves with large unsalable stocks.

In conjunction with the aid program the Bank of Sicily has been authorized to grant loans to the mine owners so that they can make up the back pay due to the miners.

Austrian Sales

In 1954 the Linz Nitrogen Works, Austria's leading producer, sold 590,000 tons fertilizer, an increase of 7% over the total business worked in 1953. The home market absorbed 145,000 tons, the balance going to overseas outlets in the proportions of 60% to European countries, 22% to Africa, 12% to Asia and 6% to America. Among the leading buyers were Egypt, Yugoslavia, Portugal, Czechoslovakia, South Africa, Hungary and Puerto Rico.

Total deliveries exceeded 1954 production by 46,000 tons resulting in a decrease in stockpiles.

In addition to nitrogen production the Linz company raised output substantially by putting a new sulfuric acid and phosphate fertilizer plant into operation.

Aerial Top Dressing

The phenomenal growth of aerial top dressing of pastures in New Zealand has been a feature of the New Zealand agricultural chemical industry during the past five years. During 1954 25% of the total area top dressed was treated from the air, reports state. This meant, in actual figures, that 2 million acres received 447 million pounds of fertilizer.

Japan's Progress

Due to the use of better seed varieties, increased use of fertilizers and other scientific agricultural practices, Japanese farmers are almost doubling

their annual crop production.

Farms which produced 60 bu. of rice to the acre before World War II are now producing 80 to 120 bu. Potato production has risen from five to eight million bushels a year. In addition, the standard of living of the Japanese farmer has increased by 40%, an instance of fertilizer usage paying dividends.

Japan is a major importer of fertilizer material. Government sources announced March 31 that plans have been made to import 616,000 tons phosphate rock and 163,000 tons potash in the period April to September inclusive. These figures, officials add, are rough estimates and may be subject to change.

World Demand

The potential demand for fertilizers throughout the world is greater than the increase in production, according to an official of Albatros Superfosfaatfabrieken N.V., Utrecht, Holland.

The Netherlands, the official said, is still the largest exporter of superphosphate in the world, and the Albatros factories are the largest producers in the Netherlands.

During the year 1953-54 the Albatros sulfuric acid plants worked at full capacity and, as a result to the recent expansion of granulating installations, all demands for granulated superphosphate were met.

Indian Lignite

The government of India is currently considering various schemes for the exploitation of extensive lignite deposits at Neyveli, in the South Arcot district of Madras State. The plans have been drawn up by a British firm of consultants, Powell Duffryn Technical Services, Ltd.

Basically, all schemes suggested provide for the production of electricity from lignite used as a fuel and for the distribution of lignite, duly processed, as fuel for industrial and domestic purposes. Superimposed on the variations of these schemes is the proposal to produce fertilizers.

The consultants estimate ammonium sulfate production, depending upon which scheme is used, at between 100,000 tons and 200,000 tons a year. At the lower level of production the proposed plant could also provide 20,000 tons urea.

The immediate demand for fertilizers in Madras State is estimated at 75,000 tons, while demand in the neighboring state of Andhra is set at 100,000 tons.

Nitrate Barter

The government of Chile has authorized several barter deals whereby importers coordinate their business with exporters of nitrate. Plans have been made for business with Japan, Peru, Poland and Sweden. Other deals are reported to be in an advanced stage of negotiation.



SPREADERS TO AUSTRIA—Baughman lime spreaders, manufactured by the Baughman Manufacturing Co., Jerseyville, Ill., were represented in this year's Fair of Wels, held in Wels County, Austria. The attendance topped all previous fairs, with more than 200,000 visitors present in one evening. The main attraction was the exhibition of many agricultural machines. Shown in the accompanying photo is H. E. Hendricks (right), chief of the U.S. Economy Mission to Austria, as he makes official presentation of seven Baughman lime spreading machines to Minister Thoma, in the presence of Mr. Bloechl, President of the Austrian Chamber of Commerce. The spreaders will be used by the Upper Austrian Agricultural Unions.

British Demand for Share of Pacific Rock Phosphate Disturbs Australians

LONDON—Recent increases in the price of North African phosphate rock may have repercussions for the world superphosphate industry, according to trade sources in London. The problem stems from Britain's reported intention of taking up its share of the relatively cheap high grade fertilizer available at Nauru

and Ocean Island in the Pacific.

Hitherto, the British have been content to leave their share for the use of Australia and New Zealand. Under an agreement made in the 1920's, Britain and Australia are each entitled to 42% of the output with New Zealand taking the balance of 16%. The U.K. trade, however, preferred to use the North African source but the recent price squeeze has underlined the advantages of importing from the Pacific.

If the demand is implemented, and traders say that it will, Australia will have to look elsewhere for the balance of the requirement over the allotment of 42%. This is looked upon as serious in Australian government circles because the usage of superphosphate is showing an increase each year. Currently the off-take is set at around 1.6 million tons a year but agricultural observers predict that by 1958 the figure will be touching 2.5 million tons.

The first alternative source to be tapped will be North Africa and the added cost will mean a price rise of at least 10%.

Such a steep rise in the price of superphosphate would adversely affect the primary producers who are attempting to hike their production and, at the same time, keep their prices down. Already the possibility of paying a subsidy to the farmers is being debated and it is likely that this course will be adopted should the British persist in their demands. Negotiations, it is reported, are still proceeding in Canberra.

Deciduous Fruit Tree Spraying Schedules Issued in California

SAN FRANCISCO—The California Department of Agriculture has issued new schedules showing suggested times for spraying deciduous fruit trees in order to combat insect pests.

These schedules are based on "the experiences of particularly successful farmers" as well as on standardization inspections to determine the required minimum levels of fruit defects, actual field inspections of orchards and vineyards, and the examination of cull fruit, according to Stewart Lockwood and C. J. Weigle, both of the State Department of Agriculture.

Orchard sanitation has been stressed in the preparation of the schedules. Mr. Lockwood and Mr. Weigle say, with attention to destruction of weeds where plant bugs might overwinter, and to the attacking of parasitic insect pests at the optimum time of the year. The schedules cover attacks by 76 varieties of insects on 11 types of deciduous fruits, or various combinations of insect pest attacks.

Pink Boll Worm Threat Eases in West Texas

BIG SPRING, TEXAS—The pink boll worm threat to West Texas' cotton area has lessened somewhat, according to Bert Badger, pink boll worm inspector with the State Department of Agriculture.

The area has had two severe freezes which killed about half the worms which were hibernating in old cotton bolls. Earlier Mr. Badger had said conditions were right for a heavier infestation, but now thinks the freezes may hold the worms back to a slow start next summer.

VIRUS-FREE STRAWBERRIES

WASHINGTON—Plant nurseries this spring have about 150 million virus-free strawberry plants of 24 different varieties available for planting by eastern gardeners and commercial growers, the U.S. Department of Agriculture has announced. Besides the eight varieties offered last year, substantially virus-free stocks of 16 other varieties are now on the market in moderate quantities. They include Albritton, Armore, Aroma, Belmar, Dixieland, Dunlap, Fairfax, Massey, Midland, Missionary, New York, Pocahontas, Robinson, Stelemaster, Tennessean and Vermilion.

GEORGIA P... that discusse... Georgia Ento... South Caroli... of Agricultur... California Sp... Others on th... tomology; M... Department... Toomer Fert...

Geor... Pane...

ALBANY, mixed in fer... trol soil pest... was explained... meeting of... cal Society.

A panel d... fertilizer hig... the two-day... Springs just...

In leading... Rieder of t... Atlanta, sai... workers hav... crop damag... ground pest... the develop... new importa... control of...

"Results... and crop re... Rieder said...

Dr. John... Carolina... Clemson, o... South Car... eldes mixe... prove crop... The use o... binations... increased... acres in 1...

In the C... said, pestic... are being u... of Irish pot... vegetables... about 500... crops.

W. E. B... Departmen... told how y... and corn w... Marshallvil... were used... white fring...

He said... stands on l... with comb... or heptach... the cotton... yielded 26... ton than t... Better star... also evider...

Minter I... gist of the... tion, Expe... use of pest... sweet pota...

Using co... his talk, M... lindane, B... control of... of these m... ing sweet... tively free... Others a... G. G. Roh... search Ser... Agricultur... as modera... bert Hende...



GEORGIA PANEL—Above are shown several of the members of a panel that discussed pesticide-fertilizer mixtures at the 19th annual meeting of the Georgia Entomological Society. From left to right they are: Dr. John K. Reed, South Carolina Crop Pest Commission; R. A. Moncrief, Georgia Department of Agriculture; R. E. Rieder, Shell Chemical Corp., Atlanta, and F. E. Allison, California Spray Chemical Corp., Tifton, Ga., retiring president of the society. Others on the panel were: W. E. Blasingame, Georgia Department of Entomology; Minter Dupree, Georgia Experiment Station; G. G. Rohwer, U.S. Department of Agriculture, Macon, Ga., and Albert Henderson, Wilson & Toomer Fertilizer Co., Jacksonville, Fla.

Georgia Entomologists Hear Panel Discussion on Mixtures

ALBANY, GA. — How pesticides mixed in fertilizers have helped control soil pests and improve crop yields was explained here at the 19th annual meeting of the Georgia Entomological Society.

A panel discussion on pesticides in fertilizer highlighted the final day of the two-day meeting held at Radium Springs just south of here.

In leading off the discussion, R. E. Rieder of the Shell Chemical Corp., Atlanta, said in the past agricultural workers have been prone to overlook crop damage resulting from underground pests but that recently, with the development of new pesticides, new importance has been given to the control of these insects.

"Results have been outstanding and crop response tremendous," Mr. Rieder said.

Dr. John K. Reed of the South Carolina Crop Pest Commission, Clemson, described how farmers in South Carolina have used insecticides mixed with fertilizers to improve crop production in his state. The use of pesticide-fertilizer combinations on 26,000 acres in 1949 increased to approximately 114,000 acres in 1952, he said.

In the Charleston area, Dr. Reed said, pesticide-fertilizer combinations are being used on about 5,000 acres of Irish potatoes, 2,000 acres of other vegetables, 1,200 acres of pasture and about 500 acres of miscellaneous crops.

W. E. Blasingame of the Georgia Department of Entomology, Atlanta, told how yields and stands of cotton and corn were improved in tests near Marshallville, Ga., when pesticides were used in fertilizer to combat the white fringe beetle.

He said they got almost perfect stands on both crops in areas treated with combinations of aldrin-fertilizer or heptachlor-fertilizer mixtures. In the cotton tests he said treated areas yielded 26.8 and 23.9% more seed cotton than the untreated check plots. Better stands and higher yields were also evident in the corn tests.

Minter Dupree, assistant entomologist of the Georgia Experiment Station, Experiment, Ga., described the use of pesticides in fertilizers used in sweet potato production tests.

Using colored slides to illustrate his talk, Mr. Dupree said heptachlor, lindane, BHC and aldrin gave the best control of soil insects, and the use of these materials resulted in producing sweet potatoes which were relatively free of insect damage.

Others appearing on the panel were G. G. Rohwer of the Agricultural Research Service, U.S. Department of Agriculture, Macon, Ga.; who served as moderator for the discussion; Albert Henderson, chief chemist for the

Wilson & Toomer Fertilizer Co., Jacksonville, Fla., and R. A. Moncrief of the Georgia Department of Agriculture, Atlanta.

As the meeting drew to a close Dr. C. R. Jordan, extension entomologist of Athens, Ga., was elected president for the new year. He succeeds F. E. Allison of Tifton, Ga., a representative of the California Spray Chemical Co.

Harry Johnson of the Triangle Chemical Co., Macon, was elected vice president and Dr. H. O. Lund, professor of entomology at the University of Georgia, Athens, was re-elected secretary-treasurer.

American Potash Introduces New Space Fumigant

LOS ANGELES — A new space fumigant, "Bromotox," has been introduced to the agriculture and warehousing industries by American Potash & Chemical Corp.

The product is a mixture of ethylene dibromide and methyl bromide. Tests have shown it to be effective and cheap in controlling pests in grain, flour, rice, cheese and dried fruits, according to the company.

The firm reports that in 48-hour fumigating tests "Bromotox" resulted in 100% mortality.

University of California Research Gifts Listed

BERKELEY, CAL. — The various campuses of the University of California received during December \$500 in cash and several additional gifts of chemicals from seven different manufacturers of agricultural chemicals for the continuation of various research projects in at least four different localities.

The cash donation was made by the American Cyanamid Co. who gave the \$500 to the Riverside campus for research on insecticides. American Cyanamid also gave 6,000 lb. nitrogen to Berkeley researchers for range fertilization trial, and amino-triazole to the Los Angeles campus for study of inhibition of chlorophyll synthesis.

Other gifts included, for Los Angeles, the California Spray Chemical Co. for turfgrass culture research; for Riverside, the E. I. du Pont de Nemours & Company, Inc., for experiments with herbicides in citrus orchards; and on a statewide basis gifts by the Best Fertilizers Co., Geigy Agricultural Chemicals, and O. M. Scott and Sons Co.

Earworms, Hoppers, Aphids, Mites Top State Lists of "Important" Insects

WASHINGTON — The corn earworm, grasshoppers, aphids and mites were listed among the more important insects of 1954 by entomologists of more than half of the 23 states which made such lists. State-by-state selections were made public recently by the U.S. Department of Agriculture in its weekly "Cooperative Economic Insect Report."

"Importance" determinations, generally arrived at by a group of entomologists in each state, include considerations of damage caused by the insect, its potential for damage and need and cost of control.

Entomologists of 13 of the 23 states (which were representative of all regions of the U.S.) listed the corn earworm. Three other reporting states listed the same insect—also known as the bollworm—as a pest of cotton. One state included a "cousin" of the earworm, the tobacco budworm.

Grasshoppers were listed by the

entomologists of 14 states, including Wisconsin, Indiana, Tennessee and Arkansas, not normally considered to be in the Grasshopper Belt.

The more general categories of aphids and mites were represented on the lists of 15 and 13 states, respectively. Among the tiny sap-sucking aphids were such specific nominations as the pea aphid (by five states), the yellow clover aphid, and the green peach aphid. Included among the mites were the two-spotted spider mite, the strawberry mite, the wheat curl mite, and orchard mites.

House flies or livestock flies were listed by 14 states; cutworms by 11 states; and armyworms by 9.

States submitting their selections of "some of the more important insects" at the request of USDA's Agricultural Research Service included: Massachusetts, Rhode Island, New Jersey, Delaware and Maryland in the Northeast; Virginia, North Carolina, Tennessee, and Arkansas in the South; Ohio, Indiana, Wisconsin, Minnesota, North Dakota, and Nebraska in the Midwest; Texas and Arizona in the Southwest, and Montana, Wyoming, Utah, Nevada, Washington, and Oregon in the West.

This is the second year that summary lists of the 10 most important insects have been published in the Cooperative Insect Report. The corn earworm, aphids and mites also dominated the 1953 listings, submitted by 22 states.

Equipment Firm Elects L. L. Andrus Director

MISHAWAKA, IND. — Three new men were elected to the board of directors of American Wheelabrator & Equipment Corp., Mishawaka, at the recent annual stockholders meeting. Among them was Leslie L. Andrus, vice president of the corporation and executive head of its Dust & Fume Control Division.

The division headed by Mr. Andrus is known in many industries for work toward prevention of atmospheric pollution. The corporation manufactures dust and fume collectors for feed mills, flour mills, fertilizer plants and similar applications.

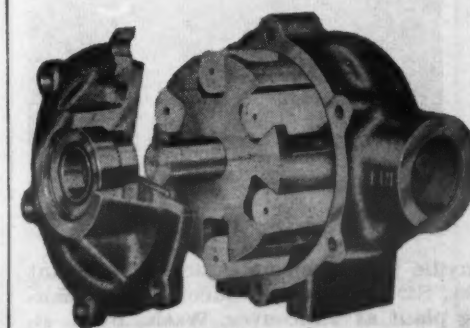
Mr. Andrus joined Wheelabrator's sales department in 1934. In 1937, he became sales manager; in 1941, vice president in charge of sales. He is a mechanical engineering graduate of Purdue University.

Harold M. Miller, vice president of the corporation since 1944, and a member of the firm since 1923, was also elected director. The third director elected was Ray P. Whitman, first vice president of Bell Aircraft Corp., Buffalo, N.Y.



For loading, unloading or stacking bulk fertilizer and packaged goods. Portable or stationary. Write for literature.

Box 56, Janesville, Iowa
Kay Enterprises



A quick look at any HYPRO Sprayer Pump reveals features that add up to more sprayer sales, fewer pump service calls and greater customer satisfaction for you.

For HYPRO Sprayer Pumps have "consumer acceptance," also, they help to sell your sprayer equipment. How? Simple, only HYPRO offers a complete line of 4 sizes of nylon roller pumps. In addition, HYPRO features the most rugged, long lasting design and construction. The Special Nylon

1 MINUTE
to increase
pump customer
satisfaction



rollers in all HYPRO Sprayer Pumps have years of proven, trouble-free service behind them. Ni-Resist case and rotor actually hardens with use! HYPRO pumps are designed for use with wettable powders or emulsified solutions. Yes, they can be depended on during the busy spraying season. You can cut costly, profit consuming service calls when you handle the HYPRO line or sprayers equipped with a HYPRO Pump.

for details . . .
write today to:

HYPRO ENGINEERING, INC.

706 39TH AVENUE N. E.
MINNEAPOLIS 21, MINNESOTA



BALANCED FARMING WINNERS—Among those attending the recent Kansas City Chamber of Commerce recognition dinner honoring Western Missouri Balanced Farming winners were, left to right, Fred Colvin, Western Mercantile Co. of Kansas City and active on the Kansas City Chamber of Commerce farm program; Mr. and Mrs. J. Eldon King, district Balanced Farming winners from Dade County; Mr. and Mrs. Frank McQueen, district winners of Holt County; John Patterson, chief agronomist of Spencer Chemical Co., and Walter Atzenweiler, agricultural director of the Kansas City Chamber of Commerce. Attending the program were 280 farm people who had won Balanced Farming awards on a county or district basis and agricultural extension personnel along with 260 Kansas City businessmen. Mr. McQueen says Balanced Farming to him adds up to balancing soil fertility and livestock with one another so that you have the feed to market well. His plan was started with a good fertilizer program and is based largely on a big feed supply. The Kings have been working on a Balanced Farming plan for the past 10 years and by 1949 had most of their 120 acres fertilized according to soil tests. Big yields are a regular thing. A 40 acre field of corn averaged 112 bu. in 1951 and another 80 acres made over the 90-bu. mark the same season.



L. A. Linville



A. B. Williams

BEMIS APPOINTMENTS—L. A. Linville has taken up duties as assistant director of sales for Bemis Bro. Bag Co., St. Louis, and is succeeded as manager of the Bemis multiwall paper bag plant at Vancouver, Wash., by A. B. Williams, formerly sales manager there. Mr. Linville will function as assistant director of sales in the absence from that post of C. W. Akin, who is temporarily assigned to plastic bag development. Mr. Linville started his career in the bag industry as a salesman with the Jaffe Co. at St. Helens, Ore., in 1930. He was made manager in 1934, and was retained as manager when the plant was purchased by Bemis in 1941. He continued as manager when the St. Helens operation was moved into a new plant at Vancouver in 1948. Mr. Williams joined Bemis at St. Helens in 1942 as a salesman and was made sales department supervisor at Vancouver in 1948. He became sales manager in 1949.

Research Progresses On Hybrid Sorghums

LUBBOCK, TEXAS—Seed for hybrid grain sorghums will be plentiful enough by 1957 to supply 20% of the state's grain sorghum acreage, Dr. N. W. Kramer, agronomist with the Lubbock Agricultural Substation, told delegates to the annual Texas Certified Seed Growers' Assn. recently.

Work on hybrid grain sorghums

has been a long, tedious process. First experimentation began on the Chillicothe Station back in 1927, under the direction of J. Roy Quimby and J. C. Stephen. The Lubbock station has been working on the new strains nearly that long, while Dr. Kramer has been interested in the work a number of years.

Within the last few years the hybrids have been developed at a number of Texas stations but never on a commercial basis.

INSECT, PLANT DISEASE NOTES

(Continued from page 5)

carryover and mild winter. Pennsylvania, Delaware, Massachusetts, and Rhode Island list cool moist weather as possible causes.

Low temperature which reduced activity of parasites and predators contributed to development of infestations in Indiana, Illinois, and Missouri. This condition also promoted growth of grass crops in Illinois. The armyworm conditions in Iowa were possibly due to the character of winter and spring weather while unusually early warm days in February and March in Kansas apparently hastened moth flight into the State. High winds and rains at peak outbreak hampered aerial spray applications in this State.

Winds were listed as contributing factors in Wisconsin, Minnesota and North Dakota. In early June a severe windstorm moved northward through western and central Minnesota and eastern North Dakota with rainy weather prevailing throughout the month. Michigan indicated moist conditions together with lodging of grain while South Dakota had heaviest infestations of the pest in rank or lodged grain. Weather was favorable to egg-hatching in Wyoming and infestations came after start of summer rains in Arizona.

Various factors, including natural enemies, chemical control measures and weather, were reported as responsible for the termination of the armyworm outbreaks. Weather retarded the first-generation larval development in Arkansas and insecticidal control was widely used. Parasitism and predation, however, were only minor factors.

Cessation of activity in Louisiana was attributed to control measures. Oviposition was interrupted by cold weather in Kentucky while protracted cold weather in May retarded larval development in Tennessee so that parasites became effective. South Carolina, North Carolina, and Virginia, which had spotted infestations, attribute termination of armyworm activity to chemical and natural controls. Natural enemies were probably responsible for controlling or terminating the relatively minor infestations in West Virginia and New Jersey.

As in South Carolina and Virginia, parasitism was very high in Pennsylvania, though spraying and pupation were also listed. Tachina flies were apparently chiefly responsible in Connecticut. New York lists parasites as the important factor with control measures playing little part while Maine and Massachusetts attribute termination to chemical control and natural enemies. Cool weather and natural enemies were primary controlling factors in Vermont.

Tachina parasites were more abundant in Ohio than in 1953 and a fungus disease was also abundant late in the outbreak. Appearance of parasites halted the outbreak in Indiana although control measures saved thousands of acres of crops. Parasites and a disease were in evidence in Illinois.

Control measures and maturity of larvae also helped terminate the infestation in this State. Chemical control was largely responsible for ending the first generation in southern two-thirds of Missouri while parasites were primarily responsible in the rest of the State. The third generation in Missouri was largely controlled by parasites although considerable insecticides were used.

Dry weather was effective in Michigan and biological and chemical control in Wisconsin. Minnesota listed widespread use of insecticides together with grain maturity and drying. Spraying had little effect on

termination of the problem in North Dakota, but heat and drouth forced pupation in the southwest area. Hot dry weather was the dominant factor also in South Dakota.

Iowa listed weather, parasites and chemical control while Nebraska attributed termination of infestations to tachina parasites and weather. Parasitic Diptera and Hymenoptera along with insecticides aided in the alleviation of the problem in Kansas. The outbreaks in Wyoming and Montana ended with pupation, although some controls were used.

Chemical controls were credited with terminating the infestations in Colorado and Utah while pupation and control were the important factors in New Mexico.

Insecticides used included toxaphene, DDT, dieldrin, chlordane, aldrin, parathion, heptachlor, endrin, methoxychlor, malathion, BHC (lindane concentrate) and paris green. The materials were mixed from basic dusts, emulsion concentrates and wettable powders. Rates of application per acre were in line with state recommendations for the various materials.

The materials were applied by both aerial and ground equipment. Reports indicated aerial application exceeded by more than 2 to 1 any other method throughout many of the heavily infested areas. In Illinois 44% of the treated acreage was applied by planes while farmers and commercial operators applied 43% and 13% respectively with ground equipment.

The cost of aerial applications, exclusive of insecticides, ranged from 75¢ to \$4.00 and averaged approximately \$1.45. Ground application costs ranged from 25¢ to 75¢ and averaged 50¢. In a majority of cases, the farmer furnished the material for use of the applicator. Depending upon the material used, the combination costs of material and application ranged from \$2.00 to \$5.00.

A review of some 65 reports on the materials used indicated that they were all effective within the range of good control. Failures resulted primarily from inadequate application and the lack of good advice relative to the stage of development of the insect. Numerous reports indicated that farmers applying insecticides during the late stages in the development of the armyworms did not receive much better protection than those who did not apply controls. Controls applied to small larvae were generally effective except where low dosages were used on areas heavily covered with vegetation.

Nematodes Resist Electrical Treatment

DAVIS, CAL.—Nematodes are tough when it comes to electricity. That is what tests at the College of Agriculture of the University of California proved recently.

Experiments conducted by Bert Lear of the Department of Plant Nematology at Davis consisted of attempting to kill the microscopic round worms by electrocuting them have not proved successful. They resisted the high voltage electrical soil treatments, and that electrical energy did not reduce the numbers of nematodes in infested soils.

High voltage was applied in varying amounts to sandy loam soil samples infested with root knot nematodes, which were isolated in plastic boxes. Both wet and dry soil was used in the tests, carried on in cooperation with Fred C. Jacob, agricultural engineer.



they'll be
poppin'
their
kernels

with POWCO BRAND

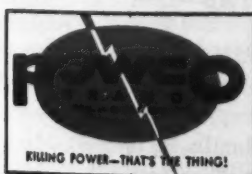
ALDRIN

CONTROL SOIL PESTS... INCREASE YIELDS

Powco Brand 20% Aldrin Granular Concentrate and 2 lb.

Aldrin Emulsion Concentrate:

1. Protect germination.
2. Are safe on seed and plants.
3. Provide early stands.
4. Reduce harvesting costs.
5. Provide better quality crops.
6. Are not absorbed by or translocated in plants.
7. Give no off-flavor.
8. Are chemically stable.



JOHN POWELL & COMPANY
Div. of Olin Mathieson Chemical Corp.
One Park Ave., New York 16, N. Y.
Chicago, Atlanta, Fort Worth, Omaha, Denver,
Pittsburgh, Philadelphia, Huntsville, Ala.

LOOK TO POWELL... FOR CONSISTENT TROUBLE-FREE QUALITY



SOILS and FERTILIZERS

Fourth Edition

By **FIRMAN E. BEAR**, Research Specialist,
New Jersey Agricultural Experiment Station.

In plain language, this new edition tells how recent modern advances in soil technology affect plant growth and annual yield... and how the effective use of basic methods can increase the productivity of farm lands. New facts, accurate figures, and 66 pointed illustrations show the relation between crops and soils.

Covers in detail: soil chemicals... important soil elements such as nitrogen, phosphorus, calcium... yield prospects of crop plants... moisture control... soil management... mechanical operations... soil conservation... organic matter maintenance.

For Sale By

CROPLIFE

P.O. Box 67, Minneapolis 1, Minn.

ACS MEETING

(Continued from page 1)

Kenneth A. Sund, Fred M. Gordon, and Bryant L. Walworth, American Cyanamid Co., Stamford, Conn. Two of their fellow-researchers at the Stamford laboratories of American Cyanamid presented a paper on the heat stability of some thiophosphate insecticides. These authors were James B. McPherson, Jr. and Gerald A. Johnson.

The effects of feeding dieldrin and heptachlor-treated alfalfa hay to dairy cows were described in a paper by Joseph R. Harris, George E. Stoddard, George Q. Bateman, J. L. Shupe, Delbert A. Greenwood, Lorin E. Harris and Thomas L. Bahler, all of the Utah Agricultural Experiment Station, Logan, Utah.

They described the methods of the experiment, which continued four months, as follows: Eight dairy cows were fed hay which had been dusted with dieldrin and heptachlor prior to the time of harvest. Two cows were assigned to each of the four treatments: 1 oz. dieldrin per acre, 4 oz. dieldrin an acre, 1 oz. heptachlor an acre and 4 oz. heptachlor an acre (two additional cows were given hay from untreated plots.)

During the test, milk samples were

taken at the end of each week, the paper reported. At the end of the experiment, butter was churned from a composite sample of cream separated from the milk of the two animals on each treatment.

After two animals were slaughtered (one on each high treatment) samples of fat, muscle, kidney and liver tissues were taken. All of these samples were analyzed chemically for dieldrin or heptachlor and heptachlor epoxide.

Protection of stored grain with pyrethrins-piperonyl butoxide emulsion sprays was discussed in a paper authored by W. E. Dove and H. O. Schroeder, Fairfield Chemical Division, Food Machinery and Chemical Corp.

Comparisons on the insecticidal efficiency of combinations of pyrethrins and piperonyl butoxide were made in oil sprays, powders, and emulsions which were applied as experimental treatments to stored grain for protection from insect damage. "In a more comprehensive manner, the efficiency of the usual oil-type pyrethrins-piperonyl butoxide emulsions were compared with oil-free emulsions.

The paper concluded that the development of oil-free sprays is "another safe and effective step in the practical use of insecticide materials that are already well-known for their unusual safety."

Other papers presented in this session covered a comparison between gamma radiation and heat sterilization of fermentation media, and other phases of fermentation studies. Studies of the storage properties of various stored foods occupied the remainder of the session.

New Garden Uses Found for Malathion

NEW YORK — Continued experimentation with malathion has uncovered new uses for this product around the garden, the American Cyanamid Co. has reported. Recent tests have shown malathion effective against insects which attack lettuce, onions, spinach, strawberries and peaches in addition to the many other pests against which this product was originally reported to be effective.

It is effective against more than 75 kinds of insects found on more than 40 different types of plants, the firm states. Described by the U.S. Department of Agriculture as "one of the safest insecticides to handle," malathion is also an effective fly killer, even against species that have become resistant to other chemicals.

Tobacco Price Support Loan Program Announced

WASHINGTON—The U.S. Department of Agriculture has announced a 1955-crop price support loan program and the minimum cents-per-pound levels at which specified kinds of tobacco will be supported. Price support is mandatory in 1955 under the Agricultural Act of 1949.

Loans will be available on 1955-crop flue-cured and cigar filler and cigar binder tobacco at 90% of parity. Loans will be available on 1955-crop Burley tobacco at 90% of parity unless growers disapprove the re-determined marketing quota in a referendum to be held in the near future pursuant to legislation recently enacted (P.L. No. 21, 84th Congress). Loans on fire-cured tobacco will be at 75% of the Burley rate, and on dark air-cured and Virginia sun-cured at 66% of the Burley rate. These levels are mandatory under existing law.

FARM POLICY

(Continued from page 1)

wheat prices they probably would seal off from the market the present surplus of Commodity Credit Corp.-owned wheat stocks.

Estimates of official USDA planning are that with wheat supported at that percentage of parity there would be less urge to plant larger acreage. Wheat would regain its market as a feed, and the Benson ideals of a livestock economy with large amounts of acreage withdrawn from field crops and put into pasture might be achieved.

That is the situation facing the plant food industry at this time. The situation is fluid and subject to tangents to meet political winds. USDA will move as fast as it can politically to reach the Benson goals.

Croplife

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The rotational circulation of this issue is concentrated in the Western states.

VIEWPOINT

Phosphate Mining, Big Business

The rapid growth of the phosphate industry in Florida and the opportunities for new products and expansion were emphasized by Louis Ware, president of International Minerals & Chemical Corp. in a recent address before a joint meeting of the civic and service clubs of Bartow, Fla. Since his remarks have a distinct bearing on the way this subject is regarded by the fertilizer industry, parts of his talk are presented here.

"The real usefulness of this great industry is the phosphate which is shipped from here all over the country and all over the world to supply fertilizers and chemicals," Mr. Ware said.

"There is no natural resource that is more important. However, taken in the raw, it is just a rock on the ground and it requires the capital of the investors, the ingenuity of management and technical people, and the capital and workmen, such as we have in the Bartow community, to make it a thing of value.

Mr. Ware said that during recent years there has been a great change in the fertilizer business and that this trend will continue for a number of years. "I refer to the demand that has developed for high analysis goods richer in phosphorus, nitrogen and potash," he explained.

"As a result of this trend you have witnessed the construction of a number of large triple superphosphate plants. The fact that most of the other producers have built these large plants here will indicate that it is more economical to locate them in this field, which has been a boon to this community. Approximately \$60,000,000 worth of new factories have been built and these large plants process the raw phosphorus into more valuable material—they up-grade it. This means more manufacturing here, more jobs, bigger payroll, and more wealth produced.

"The manufacture of triple superphosphate on such a large scale is relatively new—it is a new industry. The processes are new and there is room for improvement. The usual equipment in many cases is not well adapted to handling the sticky, highly corrosive mixtures of phosphate rock, sulphuric acid and fluorine. I do not know of any plants which offer more opportunity for continued improvement of processes in the years ahead."

"You have heard a lot about uranium production at our plant, and the possibilities of uranium from the phosphate deposits. I think there has been a lot of careless talk. However, anyone can speak up and give his opinion because no one knows. It is certainly true that none of us will find uranium a bonanza in the foreseeable future, and the plants we have built will show only very modest profits, we believe, and return of the investment over 10 years or so.

"The possible development of atomic power and the use of fissionable materials over the years ahead is like a fantastic dream. The splitting of the atom and release of its great power is, as you know, as important a discovery as fire to prehistoric man. I never differ with the prophets who recite almost unbelievable figures in saying what uranium might do in the future.

"Think of the huge investment our government has made in this atom business. If we should be so fortunate as to enjoy a long period of peace among the nations of the world and the military uses should not be required, certainly the huge investment we have made will be turned to the production of power and peaceful uses which will add greatly to the richness of our modern life and make men more free of burdensome work.

"In the mining industry we all recall the first mining and production of vanadium ore. That element was needed by the steel industry but they had great trouble getting rid of a mineral that

was not wanted and was considered useless. That was uranium. It was removed and discarded as waste in their early operations. Today it is the most active and hottest item in the mining industry. How conditions change!

"You are also familiar with the fact that we have an element in the phosphate ores which is at present not being recovered. I refer to fluorine. Fluorine is used in the aluminum, petroleum and laundry industries, for water treatment, and with many other chemicals. It is a valuable product, but to get it out of the stream of material in processes in useable form and at a profit is a difficult problem.

"We believe in time it will be recovered and will be an additional item of value, but we cannot say when. Today it impedes our processes and is a difficult item to remove and handle efficiently. We are presently expending a large sum for installation of a scrubber and device to remove it from the gases. It costs money to do this, but just as fast as we can we are doing so, and I believe the expenditures we are making toward profitable recovery of the material will eventually be fruitful—but I have no certainty at this time. Today it is a burden and expense to us, but we are doing all we can to develop better equipment and better methods of handling this problem as fast as we can."

Food Costs and Growers

The "high cost of food" is a favorite topic for conversation all around the country. As urban population grows and people get farther and farther away from the source of their food, the greater is the trend toward assuming that the farmers must be getting rich at the expense of city folks.

We hear frequently that "all these chemicals that the farmer buys just add to the food cost," resulting in expensive eating for everyone. Such assumptions are largely without foundation.

In its publication, "Rhode Island Agriculture," the agricultural experiment station of that state recently published an editorial along this line. It says that food prices aren't as high as they sometimes appear to be. "Furthermore, the average price received by farmers for the raw materials of food products is less than half the total cost to the consumer," it points out.

"There is plenty of evidence to prove that an hour's labor today will buy more food than at any other time in the history of this country. Not only that, but the food is of generally better quality and is packaged and processed in a much more convenient form for the homemaker than was true 50 years ago.

"The figures will also show that of each dollar spent by the consumer on food, an average of 45 cents goes back to the farmer. The rest goes for the costs of transporting, processing, packaging, selling, and the like. Every time the public demands and accepts a food product in a more usable form, someone has to perform the service—and get paid a living wage for doing it.

"Food prices would be much higher than they are were it not for the research and educational programs conducted by the state agricultural experiment stations and extension services, the U.S. Department of Agriculture and many public and private organizations and companies. At every stage in the process, from seed and soil to the dinner table, costs are cut and operations made more efficient through the knowledge gained from research and passed along by the extension education process."



CROPLIFE is a controlled circulation journal mailed to those responsible for the production and distribution of fertilizer and other farm chemicals and to retail dealers of the agricultural chemical industry in the U.S. To those not on the controlled list, CROPLIFE is available at \$5 for one year, \$9 for two years (\$8 a year outside the U.S. and possessions). Single copy price, 25¢.

LAWRENCE A. LONG

Editor

DONALD NETH

Managing Editor

EDITORIAL STAFF—George L. Gates, Market Editor; John Cipperly, Washington Correspondent; George E. Swarbreck, Canadian and Overseas Editor; Emmet J. Hoffman, Merchandising Editor; L. R. McDonald, Research Director; Frank W. Cooley and Roger Berglund, Assistant Editors.

WILFRED E. LINGREN

Advertising Director

BUSINESS STAFF—Carroll K. Michener, Chairman of the Board of Directors; H. J. Patridge, Honorary Chairman; Harvey E. Yantis, President; Milton B. Kihlstrum, Executive Vice President and Treasurer; Martin E. Newell, Vice President; Don E. Rogers, Vice President; Wilfred E. Lingren, Secretary and Advertising Director; Thomas A. Griffin, Business Manager; Edwin J. Hartwick, Circulation Manager; James G. Patridge, Assistant Treasurer; Carl R. Vetter, Advertising Production Manager; Peter G. Psychogios, Classified Advertising Manager.

BRANCH OFFICES

EASTERN STATES—George W. Potts, Paul L. Dittmore, Co-Managers, 114 East 40th St., New York 16, N. Y. (Tel. Murray Hill 3-3768).

CENTRAL STATES—Don E. Rogers, Manager; Henry S. French, Assistant Manager; 2272 Board of Trade Bldg., 141 W. Jackson Blvd., Chicago 4, Ill. (Tel. Harrison 7-6782).

SOUTHWEST—Martin E. Newell, Manager; James W. Miller, Assistant Manager; 614 Board of Trade Bldg., Kansas City 6, Mo. (Tel. Victor 1350).

WASHINGTON CORRESPONDENT — John Cipperly, 604 Hibbs Bldg., Washington, D. C. (Tel. Republic 7-8534).

EXECUTIVE AND EDITORIAL OFFICES—2501 Wayzata Blvd., Minneapolis, Minn., Tel. Main 0575. Bell System Teletype Service at Minneapolis (MP 179), Kansas City (KC 295), Chicago (CG 340), New York (NY 1-2452), Washington, D. C. (WA 82). Cable Address: "Palmking," Minneapolis.

Published by
The Miller Publishing Co.

2501 Wayzata Blvd.

Minneapolis, Minn.

(Address Mail to P.O. Box 67,
Minneapolis 1, Minn.)

Associated Publications
THE NORTHWESTERN MILLER
THE AMERICAN BAKER
FEEDSTUFFS
MILLING PRODUCTION

MEETING MEMOS

April 19—Minnesota Ground Sprayers Assn., Organizational Meeting, Conference Room of Coffey Hall, University of Minnesota Farm School, Jim March, Cambridge, Minn., Secretary.

Apr. 26 — Third Annual California Fertilizer Conference, sponsored by the Soil Committee, California Fertilizer Assn., University of California, College of Agriculture, Davis, Cal., Sidney H. Bierly, Executive Secretary, CFA, 475 Huntington Drive, San Marino, Cal.

May 15-17 — Chemical Specialties Manufacturers Assn., Drake Hotel, Chicago, H. W. Hamilton, 50 E. 41st St., New York 17, N.Y., executive secretary.

May 19—Fertilizer Section, 25th Annual North Carolina Safety Conference, Robert E. Lee Hotel, Winston Salem, N.C.; William O. Creel, Safety Director, Department of Labor, State of North Carolina, Raleigh, Chairman.

June 2 — South Carolina Fertilizer Meeting, Sandhill Experiment Station, near Columbia, S.C.

June 3—Fertilizer Section, Virginia State Safety Association, Jefferson Hotel, Richmond, Va.; William O. Richardson Southern States Co-operative, Richmond, Chairman.

June 11—Executive Committee, Fertilizer Section, National Safety Council, Roanoke, Va. Thos. J.

Clarke, GLF Exchange, Ithaca, N.Y., chairman.

June 12-15—Joint meeting, American Plant Food Council, Inc. and National Fertilizer Association, Greenbrier Hotel, White Sulphur Springs, W.Va. Paul T. Truitt, American Plant Food Council, 910 17th St. N.W., Washington, D.C., in charge of registration.

June 21—Western Agricultural Chemicals Assn., Spring Meeting, Clark Hotel, Los Angeles, O. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., Secretary.

June 22—Pacific Slope Branch, Entomological Society of America, Mission Inn, Riverside, Cal.

June 28-30 — Sixth Annual Pacific Northwest Plant Food Assn. Regional Fertilizer Conference, Boise Hotel, Boise, Idaho, Leon S. Jackson, 702 Lewis Bldg., Portland, Ore., secretary.

Aug. 10—Kentucky Fertilizer Conference; Guilford Theatre, University of Kentucky, Lexington.

Aug. 15-20—Farm & Home Mechanization Pageant, Michigan State College, East Lansing, Mich.

Aug. 15-19 — American Society of Agronomy and Soil Science Society of America, University of California, Davis Campus.

Sept. 7-9 — National Agricultural Chemicals Assn., Spring Lake, N.J.; Lea S. Hitchner, NAC Executive Secretary, 1145 19th St. N.W., Washington 6, D.C.

Sept. 7-9 — Ninth Annual Beltwide Cotton Mechanization Conference, Texas A&M College, National Cotton Council of America, Box 18, Memphis 1, Tenn.

Oct. 17-18 — Fertilizer Section, National Safety Congress, LaSalle

Hotel, Chicago, Thomas J. Clarke, Chairman.

Nov. 2-3 — Annual Convention, Pacific Northwest Plant Food Assn., Pilot Butte Inn, Bend Ore., Leon S. Jackson, 702 Lewis Bldg., Portland, Ore., Secretary.

Nov. 7-8—California Fertilizer Assn., Thirty Second Annual Convention, Hotel Mark Hopkins, San Francisco, Sidney H. Bierly, Executive Secretary & Manager, 475 Huntington Drive, San Marino, Cal.

Nov. 29-Dec. 2—Entomological Society of America, Netherlands Plaza Hotel, Cincinnati.

Dec. 5-7—Agricultural Ammonia Institute, Kansas City; Jack F. Criswell, Executive Vice President, Claridge Hotel, Memphis, Tenn.

Price Supports for Oilseed Crop Announced

WASHINGTON — Commodity Stabilization Service recently announced its price support decision on the oilseed crops.

It was as follows—Soybeans at 70% of parity which at the farm level means beans would be price supported at \$2.02-2.04; flaxseed will be supported at 65% of parity or approximately \$3.22, Minneapolis, and cottonseed will be supported at 65% of its parity or approximately \$42-44 per ton farm basis.

Cottonseed supports will be implemented through arrangements to be announced later, but are expected to be in the nature of a toll-crushing arrangement to crushers who pay the farmer the price support level for seed.

North Dakota Tonnage

BISMARCK, N.D.—Fertilizer shipments in North Dakota during 1954 totaled 48,642 tons, according to R. O. Baird, state food commissioner and chemist. This represents an increase from the 1953 figure of 41,158 tons. Shipments in 1950 totaled only 20,193 tons.

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge \$2.25. Situations wanted, 10¢ a word; \$1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Classified advertising rate not available for commercial advertising. Advertisements of new machinery, products and services accepted for insertion at minimum rate of \$9 per column inch. All Want Ads cash with order.

HELP WANTED

WANTED — COMPETENT FERTILIZER factory superintendent for new dry mixing and granulation plant. Location—South Dakota. Applicant must have clean record. In replying give complete information as to age, experience, references, salary and so forth. Address 652, Croplife, Minneapolis 1, Minn.

FOR FAST ACTION

AND RESULTS

try

Croplife's

CLASSIFIED ADVERTISING

SAFETY EXECUTIVES TO MEET

ROANOKE, VA. — The executive committee of the Fertilizer Section of the National Safety Council will meet here on June 11, according to a recent announcement made by Thomas J. Clarke, GLF Exchange, Ithaca, N.Y., national chairman of the group. Program plans for the October meeting of the national association will occupy much of the agenda of the executive session, Mr. Clarke indicated.

FEED • FERTILIZER
BRADLEY & BAKER

INDEX OF ADVERTISERS

Acme Fisher Div., Broadway Corp.....	Ellsworth Equipment Co.....	Pacific Coast Borax Co.....
Acme Protection Equipment Co.....	Export Chemical Corp. of Colorado.....	Pacific Plastics Company.....
Agricultural Chemicals Division, Pittsburgh Coke & Chemical Co..... 8	Fischbein, Dave, Co.....	Pennsylvania Salt Manufacturing Company of Washington.....
Agricultural Chemical Equipment Co.....	Floridin Company.....	Chas. Pfizer & Co., Inc.....
Allied Chemical & Dye Corp., General Chemical Division.....	Frontier Chemical Co.....	Phelps-Dodge Refining Corp.....
Allied Chemical & Dye Corp., Nitrogen Div....	Gandrud, E. S., Co.....	Phillips Chemical Company.....
American Potash & Chemical Corp.....	Geigy Agricultural Chemical Co.....	Pittsburgh Coke & Chemical Company, Agricultural Chemicals Division..... 8
Anco Manufacturing & Supply Co.....	General Chemical Division, Allied Chemical & Dye Corp.....	Potash Company of America.....
Ashcraft-Wilkinson Co.....	Gotcher Engineering & Mfg. Co.....	Poulsen Company.....
Bagpak Division, International Paper Co..... 4	Grace Chemical Co.....	Powell, John & Co., Inc..... 21
Baker, H. J., & Bro.....	Grand River Chemical Div., Deere & Co.....	Private Brands, Inc.....
Baughman Manufacturing Co.....	Hahn, Inc.....	Rapids Machinery Co.....
Beard, J. B., Company.....	Hammond Bag and Paper Co..... 17	Raw Materials Trading Co.....
Bemis Bro. Bag Co..... 7	Henderson Mfg. Co.....	Riverdale Chemical Co..... 13
Bradley & Baker..... 23	Hercules Powder Co.....	Savage, K. E., Co.....
Broadway Rubber Corp.....	Highway Equipment Co.....	Schrack Fertilizer Service.....
Burkhardt-Larsen Co.....	Hills-McCanna Co.....	Shell Chemical Corp.....
Burrows Equipment Co.....	Hypro-Engineering, Inc..... 19	Specifide, Inc.....
Butler Manufacturing Co.....	International Minerals & Chemical Corp.....	Spencer Chemical Co.....
Calcium Carbonate Co.....	International Paper Co., Bagpak Division..... 4	Stoker, H. S., Company.....
California Spray-Chemical Corp.....	K. B. H. Corporation, The.....	Tennessee Corp.....
Campbell, H. D., Co.....	Kay Enterprises..... 19	Thompson-Hayward Chemical Co..... 15
Chase Bag Co.....	Kraft Bag Corporation..... 3	Union Bag and Paper Corp.....
Chemical Specialties.....	Larvacide Products, Inc..... 11	United Petroleum Gas Co.....
Chipman Chemical Co.....	Lion Oil Co.....	U.S. Industrial Chemicals Co.....
Clover Chemical Co.....	The Mackwin Co.....	United States Potash Co.....
Commercial Solvents Corporation..... 5	Markley Laboratories, The.....	United States Rubber Co., Naugatuck Chemical Div....
Croplife..... 6, 24	Wilson & George Meyer & Co..... 15	United States Steel Corp.....
Deere & Co., Grand River Chemical Div.....	Michigan Chemical Corporation.....	Velsicol Corporation.....
Diamond Alkali Company.....	Midstate Machinery Co.....	Virginia-Carolina Chemical Corp.....
Doane Agricultural Service.....	Naugatuck Chemical Div., U.S. Rubber Co....	Vulcan Stamping & Mfg. Co.....
Douglas Chemical Co.....	Nelson, Edward S., Ltd..... 6	Vulcan Steel Container Co.....
	Nitrogen Div., Allied Chemical & Dye Corp....	

A NEW SERVICE for Advertisers and Agencies...

CROPLIFE does more than offer the only *weekly* advertising medium to advertisers and advertising agencies interested in reaching the agricultural chemical field. The complete services of Croplife's Home Office in Minneapolis and its full-time branch offices in New York, Chicago and Kansas City are available for the servicing of advertisers and agencies.

Requests for market information, statistical analyses, industry news tie-ins and other service will be handled by experienced full-time staff members of the company.

Working under the direction of Croplife's seasoned and experienced editors in the Minneapolis Home Office is the Advertiser Service Department, headed by a trained statistician and market research man who directs the work of a library and research staff of five persons.

Croplife's advertising sales staff includes full-time staff members in each branch office, with several years of experience in businesspaper advertising, whose first objective is to be of service to advertisers and agencies interested in the field served by Croplife. These repre-

sentatives know agriculture thoroughly and their experience in industries and organizations serving the agricultural field qualifies them highly for their advertising sales and service assignments. Included in this wealth of experience are previous assignments with agricultural experiment stations, the United States Department of Agriculture and daily and weekly newspaper work in agricultural communities.

In the nation's capital, Croplife has its own Washington correspondent, a veteran capital newsman who interprets the Washington scene in terms of short and long range impact on the industry. In looking behind the government news releases he is able to report valuable information on trends and significant behind-the-scenes activities.

Croplife's foreign manager is alert to overseas developments of interest to the agricultural chemical industry and handles requests from advertisers and agencies for information and service on the foreign market.

Advertisers and advertising agencies interested in the agricultural chemical industry are invited to make use of this advertiser service program.

WRITE—WIRE—PHONE our nearest office for the complete story of how Croplife and its complete staff and facilities can be of service to you in planning and producing your advertising to the agricultural chemical industry.



Croplife ...for richer ^{sales} fields

New York, 114 E. 40th St.
Murray Hill 3-3768

Minneapolis, 2501 Wayzata Blvd.
Main 0575

PUBLISHED WEEKLY BY
Miller Publishing Company
at Minneapolis
Issued Monday. Advertising Forms
Close 14 Days Preceding

Chicago, 2272 Board of Trade Bldg.
Harrison 7-6782

Kansas City, 614 Board of Trade Bldg.
Victor 1350